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# **The Experience of Early Mobility after One Week of Hospital-acquired Deconditioning**

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A Dissertation Submitted to The Graduate School at the University of Missouri-St. Louis  
In partial fulfillment of the requirements for the degree  
Doctor of Philosophy in Nursing

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### Abstract

Older adults who are hospitalized spend most of their time in bed. Prolonged bed rest and immobility in older adults may result in deconditioning of the muscles, leading to a loss of muscle mass and strength. The loss of muscle mass results in weakness and reduced physiological functioning post-hospital discharge. Immobility is especially problematic in older adults who naturally lose muscle mass and strength due to the aging process. Older adults who experience weakness post-hospital discharge face challenges with mobility. The purpose of this study was to describe the early mobility experiences of adults who are 60 years old and older and had been in the hospital for at least one week due to a medical condition, and then discharged. This focused ethnography study included in-depth interviews and observations of natural movement. Participants were male and female adults who were 60 years and older (n=10), admitted to the hospital for at least one week, and then discharged. The audio-recorded interviews were transcribed, and then analyzed by a team of three researchers. *Mobility is Life* was identified as the overarching pattern. Two subpatterns and six themes were identified. The first subpattern, *The Crushing Assault: Consequences of Immobility*, included three themes: *Physiological Consequences of Immobility*, *Changes in Moods and Emotions Resulting from Immobility*, and *A Change in Identity Resulting from Immobility*. The second subpattern, *The Rocky Road to Regaining Mobility*, included three themes: *Physiological Responses to Regaining Mobility*, *Influence of Attitude on Recovery and Regaining Mobility*, and *Resources and Strategies to Regaining Mobility*. The findings revealed that a loss of mobility post-hospitalization is problematic for older adults who have difficulty with activities of daily living and providing self-care, including personal hygiene. The change

in the ability to function is distressing to the older adult, and results in frustration and self-reported depression. The inability to function leads to feelings of uncertainty and a challenging recovery. Regaining mobility is prolonged and difficult for the older adult who must combat weakness and fatigue during recovery. The most successful recovery from immobility includes the use of resources, including a supportive family and healthcare team.

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## **Chapter I: Introduction**

Chapter 1 includes the problem and problem statement, purpose, significance and rationale, associated assumptions, and the research question. The problem of immobility and hospital-acquired deconditioning is reported. An introduction to the negative effects of immobility in hospitalized older adults is presented. Early remobilization efforts and the limited qualitative remobilization research are introduced. A personal story is shared.

### **Problem**

Over 35 million patients are hospitalized every year in the United States (Hoyer et al., 2016), and many are placed on bed rest, resulting in physical immobility, frequently without valid medical reasons (Brown, Friedkin, & Inouye, 2004). Immobility is defined as a state in which the individual experiences limitation of physical movement (Faria, 1989).

Historically, immobility was identified as a problem during World War II. The response of injured soldiers spurred an interest in human immobility when the effects of bed rest, following injuries, were seen to have deleterious effects (Covertino, 1995). Due to the influx of incoming wounded, the soldiers were not allowed to remain on bed rest to recover. The soldiers who got up earlier improved faster and experienced fewer complications (Corchran, 1991).

The current problem of immobility from bed rest in hospitalized older adults is presented, followed by the problem of immobility in intensive care unit (ICU) patients. Immobility-associated deconditioning and hospital-acquired deconditioning are discussed. Early mobility in the ICU, where most of the immobility-related research has

been conducted, is introduced, followed by the effect of aging on early mobility post-hospitalization.

**Immobility in hospitalized older adults.** In hospitalized older adults, the amount of time spent in bed is disproportionate to the time spent being active and out of bed. During an acute hospitalization, older adults spend approximately 83% of their hospital stay in bed and 12% of their time in a chair (Brown, Redkin & Flood, 2009). In a study of hospitalized older adults, 33% had bed rest ordered during some portion of the hospital stay, and nearly 60% of the bed rest orders for the group with the lowest level of mobility had no medical indication documented (Brown, et al., 2004).

As a result of immobility, up to 65% of older adults who are hospitalized experience a decline in physical function and mobility (Brown et al., 2004; Covinsky et al., 2003; Rukstele & Gagnon, 2013). Functional decline occurs in older adults by the second day of hospitalization (Hirsch, Sommers, Olsen, Mullen, & Winograd, 1990). Further, prolonged immobility of hospitalized older adults is associated with a 61% greater risk of the inability to independently perform activities of daily living when compared to older adults who were not hospitalized (Falvey, Mangione, & Stevens-Lapsley, 2015).

**Immobility in intensive care unit patients.** In ICU patients, immobility is a primary cause of complications (Olkowski & Shah, 2016). Traditionally, managing ICU patients included bed rest, often for extended periods of time (Moss et al., 2016). One explanation for the lack of mobilization in critically ill patients is the complex environment of the ICU and the considerable effort required for safe mobilization of the patient (Barber et al., 2015). Despite the overwhelming evidence that adverse effects

accompany immobility, patients who are admitted to the ICU continue to be placed on bed rest and remain immobile (Brown, et al., 2009).

**Immobility-associated deconditioning.** The reduced activity from bed rest and immobility can result in rapid deconditioning, which is described as a complex process of physiological change after a period of inactivity, bed rest, or sedentary lifestyle (Gillis & MacDonald, 2005). This rapid deconditioning is followed by a loss of muscle mass and atrophy (Brower, 2009), which is associated with poor outcomes such as muscle weakness and reduced functional ability (Brown et al., 2004). Deconditioning from bed rest poses an even higher risk for loss of muscle mass and strength in older adults who were found to have significantly lower muscle protein synthesis after five days of bed rest compared to the same participants measured before five days of bed rest (Tanner et al., 2015). Further, immobility that results in severe deconditioning may lead to irreversible functional decline in older adults (Gordon, Grimmer, & Barras, 2019).

**Hospital-acquired deconditioning.** Although there is no standard definition of hospital-acquired deconditioning, the general expectation is that health should improve with delivery of care, and not decline (Gordon et al., 2019). While physical inactivity in hospitalized older adults is widely recognized to result in negative outcomes, it none-the-less remains common practice (Graf, 2006; Stall, 2012). Physical inactivity can be especially devastating for older adults who have repeated episodes of minimal walking while hospitalized and during the recovery period following hospitalization (Tanner et al., 2015).

**Early mobility in the intensive care unit.** During the mid-2000's, early mobility studies focused on intensive care unit (ICU) patients. In mechanically ventilated ICU

patients, immobility-related complications from the traditional heavy sedation and immobilization spurred an interest in early mobility (Corcoran et al., 2016). Given the expanding literature on the harmful effects of immobility from bed rest, early mobilization of ICU patients gained attention (Hashem, Nelliott, & Nedham, 2016). The primary focus of early mobility research was quality improvement. Researchers studied the effect of early mobility on length of stay (Corcoran et al., 2016; Floyd et al., 2016; McWilliams et al., 2015; Schaller et al., 2016) and mechanical ventilation days (McWilliams et al., 2015), as complications of immobility.

**Effect of aging on early mobility post-hospitalization.** It is known that aging negatively impacts muscle mass and strength (Deschenes, 2004; Keller & Englehardt, 2013). Over time, the multifactorial aging process leads to a loss of muscle mass and strength, resulting in weakness and potential disability in older populations (Seene & Kaasik, 2012). As a result, older adults who are discharged from the hospital frequently require treatment by physical therapists for remobilization and other functional deficits resulting from hospital-acquired deconditioning (Falvey et al., 2015). The recovery from deconditioning and functional decline is difficult and can negatively affect the older adult's transition from the hospital (Smart, Dermody, Coronado, & Wilson, 2018).

When older patients are discharged from the hospital, the 24-hour support from the nurse is gone. What happens if the patient is weak or afraid? What if they rest to get better, but get weaker? What are they experiencing? The problem is that nurses do not know what patients are experiencing after hospital discharge.

### **A Personal Story**



The following story about remobilization after hospitalization illuminates the mobility problem that older post-hospitalized adults face at home. This is a true story about a dear loved one of the author of this dissertation. Dee is an 80-year-old female who had a serious six-hour life-saving surgical procedure performed. Dee spent the weeks prior to the surgery preparing her extensive flower garden for her absence. Dee cleaned her house from top to bottom. Curtains were washed, air conditioning and heating vent covers were removed, and the descending vents vacuumed thoroughly. Floors were scrubbed, and the three bathrooms were spic and span. Dee was ready.

Typically, patients with the same surgery would go to a rehabilitation facility for physical therapy, but Dee had been walking with help in the ICU since the day after her surgery. As a matter of fact, Dee walked the entire perimeter of the ICU two days in a row before being discharged from the ICU. Following a one-week hospital stay, Dee was discharged from the hospital. Dee had an attentive family and was allowed to go home with a plan of home physical therapy several times a week.

Dee returned home to a lovely mock bedroom set up on the first floor of the home. Thankfully, Dee would not have to take the stairs to get to her bed. Dee was in pain and exhausted from the one-hour drive home from the hospital. Dee took a pain pill and laid down on the bed specially placed for her where she slept most of that day.

Dee's husband was attentive to her pain from surgery and faithfully administered the prescribed pain medication every three or four hours. An anti-anxiety medication was added to help ease the discomfort between pain medication doses. As a result of the medication dosing, Dee spent the next month in a detached and somnolent state. Although Dee had physical therapy visits scheduled, she was not interested in the therapy

because she was too tired, and the therapy was too hard. Dee's mobility level and strength declined. She could not walk alone and could not bathe or independently perform activities of daily living. In fact, Dee required several rest periods between bathing and getting dressed.

A visiting nurse spoke to Dee's daughter about the decline in mobility and physical function. However, the nurse did not ask Dee how she felt about her progress. Dee was unhappy about her progression of mobility and the inability to return to her activities. Dee could not even hold a book to read. She felt lost and alone. Her life was not the same. Yet, the nurse did not ask Dee.

Following hospital discharge, the recuperating patient remains the central driving force for the plan of care. The most effective plan of care includes collaboration between the nurse and the patient. As a primary stakeholder in the plan of care, the patient deserves to have a voice and be heard. This study allowed the individual to describe their early mobility experience and be heard.

### **Problem Statement**

It is well documented that immobility and hospital-acquired deconditioning are harmful to hospitalized patients. However, there is a lack of adequate qualitative research on early mobility. In fact, only three qualitative studies were found that reported the early mobility experience and all were with ICU survivors. Further, qualitative research reporting the early mobility experience of older adults post-hospitalization is absent in the literature.

Nurses caring for hospitalized patients recognize the problems associated with immobility and physical inactivity, as well as the benefits of early mobility. As such,

nurses encourage and assist patients to get out of bed, to the chair, and to walk. However, nurses caring for hospitalized patients do not routinely ask patients about the early mobility experience, and patients do not get the chance to verbalize their experiences.

Research clearly supports the need for early mobility during hospitalization. However, a gap exists in describing the experience of early mobility in patients who have been discharged after being hospitalized for at least one week. Further description and illumination of the patient's experiences is needed.

An interest in the qualitative aspect of early mobility has emerged in recent years. Yet, there is limited qualitative research on early mobility. Following a search of the nursing literature, only two studies were found that focused on the patient's experience of early mobility were found. The first study was an exploration of early mobility in medical-surgical ICU survivors and uncovered the primary idea of self-recalibration (Corner, Murray, & Brett, 2019). The second study explored interactions between patients who were mechanically ventilated and their nurses. The study found that the nurses focused on long-term goals for the patient while the patient focused on short-term goals (Laerkner, Egerod, Olesen, Toft, & Hansen, 2019). Doroy (2016) reported dissertation findings about the experience of being a patient in the ICU and included early mobility of patients with less sedation. The primary theme uncovered was a loss of self (Doroy, 2016).

Three related studies were found in the search for patient experiences with early mobility. All three studies focused on the ICU patient. Barber et al. (2015) studied barriers and facilitators to early mobility using focus groups of nurses, physical therapists, and physicians working in ICUs. Barriers included the culture of the ICU and

a lack of communication and resources, while facilitators to mobilizing ICU patients included organizational change, and improved communication and resources (Barber et al., 2015). Two other studies investigated factors healthcare professionals consider when mobilizing critically ill patients. Amundadottir, Jonsdotir, Sigurdsson, & Dean (2017) reported clinical reasoning leading to physical therapist's decisions to mobilize ICU patients. Four overarching categories were identified, and included (a) patient safety, (b) constant assessment, (c) individually tailored interventions, and (d) barriers and solutions to patient mobilization (Amundadottir et al., 2017). The last study described factors that nurses consider when making decisions about mobilizing ICU patients (Krupp, Ehlenbach, & King (2019). Four primary categories emerged as influencing decisions that nurses make when mobilizing patients, and included (a) the purpose of the mobility, (b) information gathering, (c) creating and implementing the plan, and (d) barriers to implementing the plan (Krupp et al., 2019).

### **Purpose**

The purpose of this focused ethnography study is to describe the early mobility experience of adults who are 60 years old and older and have been in the hospital for at least one week due to a medical condition, then discharged. The overall aim is to understand the shared experiences of early mobility in older adults post-hospital discharge.

### **Significance of the Study**

Older patients face a challenge with mobility post-hospitalization due to weakness and pain. Reduced mobility results in increased cost, longer lengths of hospital stay, increased caregiver burden, and potential long-term care placement due to a decreased

ability to perform self-care (Brown et al., 2004; Corcoran et al., 2016; Graf, 2006; Hoyer et al., 2016). It is clear that reduced mobility increases weakness and the risk for muscle atrophy (Dirks et al., 2016; Kortebein et al., 2008; Puthuchearu et al., 2013). What is not clear is the experience and personal impact of early mobility post-hospitalization through the perception of the older adult. The paucity of literature on early mobility post-hospitalization warrants additional inquiry.

No qualitative studies were found that explored the experiences of early mobility in post-hospitalized older adults. Exploring the early mobility experience post-hospitalization will facilitate an understanding of the experience. Understanding this experience can add valuable insight into managing the multifaceted components of early mobilization of the patient after hospitalization.

### **Rationale for the Study**

As nurses, we seek to provide the best physical care as well as emotional support for our patients. Reaching milestones such as walking alone for the first time or taking the stairs may be a reason for celebration. However, the activity may have been incredibly difficult for the individual who may not understand the resultant physical changes. Similarly, not reaching a milestone may be distressing to an individual who does not understand why the alteration in mobility has occurred and may even wonder if it will ever change. Engaging with the patient about the early mobility experience will allow the patient to share his/her experience. This study is needed to examine the individual's early mobility experience with a goal to understand the experience.

### **Associated Assumptions**

The first assumption is that patients have a desire to regain a mobility level reduced from hospital-acquired deconditioning. The second assumption is that the patient's experience will affect their personal decisions and actions regarding mobility.

**Research Question**

1. What are the shared early mobility experiences of older adults post-hospitalization who have experienced a decrease in mobility related to hospital-acquired deconditioning?

## **Chapter II: Literature Review**

Chapter II is a review of the literature. This chapter includes a description of the early mobility qualitative literature search, the experience of early mobility qualitative research and the related research, the early mobility quantitative clinical research, and the scientific foundational research related to immobilization and remobilization in animal and humans. Last, the theory used to inform the study is presented.

### **Early Mobility Qualitative Literature Search**

Although it is well established that early mobilization of patients is beneficial, there is limited associated qualitative data available. A search of the literature was conducted using CINAHL, Medline, and PubMed for qualitative studies to obtain reports of adult patients' experiences of early mobility. Key words used were qualitative and early mobility. To identify all potentially relevant articles, the only limiters were adults and the English language. No date limitations were used. Abstracts were read for pertinent articles based on relevance to the topic of the experience of early mobility. The findings of the qualitative literature search are described.

The search resulted in six qualitative studies on early mobility. Of these, two studies reported the adult patients' experiences of early mobility. One relevant nursing study reported results in the ProQuest database. Three related early mobility qualitative research studies were found. All studies were conducted with ICU survivors. No studies reporting the experience of early mobility after hospital discharge were found.

### **Experience of Early Mobility Qualitative Research**

The research on experiences of early mobility in adult ICU survivors is presented. Studies included patients' experiences of physical therapy post critical illness in the ICU

(Corner et al., 2019), nurse-patient interactions that focused on early mobility in non-sedated and awake patients who were mechanically ventilated in the ICU (Laerkner et al., 2019), and patients' experiences with early mobility with lighter sedation in the ICU (Doroy, 2016). Although the studies had different objectives, several similarities were found. Findings included fatigue and weakness, becoming a different person, diverging viewpoints between nurses and patients, negotiation about mobilization, and instilling hope for the future (Corner et al., 2019; Doroy, 2016; Laerkner et al., 2019).

**Fatigue and weakness.** Patients experienced fatigue and muscle weakness due to bed rest (Laerkner et al., 2018), and were stunned by the severity of their weakness (Corner et al., 2019). Most participants remember the weakness they experienced the first time they tried to get out of bed (Doroy, 2016). Sasha stated "I didn't realise I couldn't walk. I thought I could. I tried to get out of bed loads of times, but up here I was weak (legs) and the top of my arms were weak. I couldn't do it" (Corner, et al., 2019, p. 5). One participant getting out of bed for the first time stated "When they first said, okay, you know, it's time, you're going to have to get up and start walking. And I thought, okay, piece of cake. And so I – she helped me down off the bed and I almost fell. Because your legs are just so weak..." (Doroy, 2016, p. 55).

In addition to fatigue, participants reported various expressions of exhaustion. A 71 year-old man with sepsis stated "I felt so exhausted...I couldn't move...so when they (the nurses) said that I had to get out of bed I just thought...no way...I was barely alive" (Laerkner et al., 2018, p. 2333). Carolyn stated "I couldn't even stand up. I was really very, very weak" (Corner et al., 2019, p. 6). Despite recognizing the importance of early mobilization, patients nonetheless, found it to be difficult and tiring (Corner, et al., 2019).



Mrs. Flint, a 57-year-old woman with sepsis said, “of course, I know that mobilisation is important, but back then (in the ICU) I just couldn’t understand what happened. I couldn’t take it in. I was just so sick and tired” (Laerkner, 2019, p. 2334). Participants were reluctant to participate in physiotherapy, as a result of the fatigue. Sarah stated “I didn’t want to do it (physiotherapy). I used to dread them coming, any excuse to get out of it. I was just so tired” (Corner et al., 2019, p. 6). John stated ‘physically tiring, emotionally, you’re like “sh\*t, really? I’ve got to do it (physiotherapy) now. I haven’t got any energy at all.” (Corner et al., 2019, p. 5, 7). Even at home, early mobility was difficult as indicated by one participant who stated, “and still, when I got home I struggled because I felt exhausted” (Doroy, 2016).

**A different person.** Doroy (2016) reported a primary theme of loss of self, caused in part by weakness, which led to a fragmented reality. Most participants described the early mobility and physical therapy process as starting over and indicated there was a pre-illness person and a post-illness person, which led to a sense of being disconnected from who they were before being hospitalized (Doroy, 2016). A 57-year-old female stated “I wanted everything to back up and be the same, and it wasn’t that way” Doroy, 2016, p. 43).

A 52-year-old female stated...it was the hardest thing I think I ever done, even giving birth to my son, I think that, you know, getting up every day, and feeling as horrible as I did, and pushing my body to, you know – I’d tell them, you know they’re going to work you really hard today, and I’d say, good, bring it on because I want to get out of here, so whatever I have to do, you tell me...I’ve worked so hard, but I’m still not the same (Doroy, 2016, p. 41).

Women were more frustrated about being a physical burden to others, while men expressed concern, and even anger, about the loss of strength and not being able to physically accomplish what they did prior to being hospitalized, even though the men followed exact medical instructions (Doroy, 2016).

Similarly, Corner et al., (2019) explored early mobility in ICU survivors and uncovered a primary idea of self-recalibration, which was driven by a lost sense of self, as identified by Doroy (2016). Often, patients did not remember the early stages of illness resulting in their physical decline. Participants described a broken life resulting from periods of memory loss such that patients were stunned by their current physical condition and what they remembered themselves to be (Corner et al., 2019). The severe weakness did not make sense to the patients who had difficulty visualizing what should come next in the recovery period (Corner et al., 2019). As a result of the memory loss, the next steps of mobility recovery did not make sense (Corner et al, 2019). Ben stated:

“The first days when I couldn’t move...I was disillusioned with the whole thing, and I thought ‘This is never going to work’...I couldn’t see how anything could turn round, but I was told just to trust. But that period was very difficult because when you don’t see any light at the end of the tunnel, it’s difficult to sort of engage with it, and it’s difficult to trust...There was plans in my head, but it’s difficult to kind of have them if you think it’s just a waste of time what you’re doing. Now I know that there is (light at the end of the tunnel)...and I believe I’ll be walking next week, they’ve (physiotherapists) let me believe that” (Corner et al., 2019, p. 6).

A 59-year-old male had a positive early mobility experience. “But then we - - we were doing the physical therapy. Yeah. I enjoyed that. But I liked getting up and moving around on my own, I was - - I was real happy about that” (Doroy, 2016, p. 55). On the other hand, a 63-year-old male felt apprehension and fear about the experience. “I was actually more nervous about doing it than - - than it really was, you know, right? I don’t remember it being particularly awful or anything” (Doroy, 2016. P. 55).

In contrast, Laerkner et al. (2019) explored nurse-patient interactions related to mobility in awake, non-sedated patients who were mechanically ventilated. Diverging viewpoints revealed that patients had a short-term focus and felt overwhelmed with mobilization, whereas the nurses had a long-term recovery perspective (Laerkner et al., 2019). Patients expressed fatigue and negotiated with nurses to mobilize at a later time by using facial expressions, written notes, or by forming simple words such as “no” or “not now,” (Laerkner et al., 2019). The ICU nurses used mobilization by assimilating everyday activities of the patient’s life in goal-setting to inspire hope for the future (Laerkner et al., 2019). For example, Jenny, Mrs. Larsen’s nurse, used Shelly, a patient’s dog at home, in setting a long-term goal for the patient.

“I can see it is important that you get your strength back, so you can go home. So, it’s also important that you get out of bed, even though it might be hard. We’ll help you. I am sure that Shelly will be happy to see you again” (Laerkner et al., 2019, p. 2333).

Early mobility in mechanically ventilated ICU patients who are not sedated requires complex clinical judgement, a compassionate approach, and patient participation. Nurses

found that mobilizing patients was easier when patients participated in making mobility-related decisions (Laerkner et al., 2019).

I think they (the nurses) listened to me, so I could be part of the decision about whether it (mobilisation) was going to be now, or if I could just wait slightly to get up. I think that meant something. Because I couldn't manage it (mobilisation) at all, but they (the nurses) said that I could rest for a couple of hours, then it was easier to prepare myself and do it" (Laerkner et al., 2019, p. 2335).

In summary, three qualitative studies of the early mobility experience included patients' reports of fatigue in the ICU and noted that early mobility is unmistakably beneficial for the critically ill patient. Research reporting the experience of early mobility in individuals who are discharged from the hospital is absent in the literature; more research is needed. The clinical implication is that patients experience difficulty with remobilization following hospital immobilization. A better understanding of the patient's experience may promote improved engagement between the nurse and the patient. Improved engagement and enhance trust and communication between the nurse and the patient, which may facilitate the early mobility process post-hospitalization.

### **Related Qualitative Studies**

Three related studies of early mobility were found. The studies included barriers and facilitators of early mobilization of critically ill patients and the decision-making process of nurses and physical therapists regarding early mobilization (Amundadottir, Jonsdottir, Sigurdsson, & Dean, 2017; Barber et al., 2015; Krupp, Ehlenback, & King, 2019).

Amundadottir et al. (2017) used observation and semi-structured interviews to study barriers and facilitators identified by 26 physical therapists related to early mobilization of ICU patients and found four overarching categories, which were (a) safety and well-being, (b) constant assessment with linked intervention, (c) a tailored, response-driven intervention, and (d) barriers and solutions. Six primary categories emerged, which were the (a) patient, (b) physical therapist, (c) ICU environment, (d) transfer, (e) frequency, intensity, type, and time or duration of the activity, and (f) planned outcome (Amundadottir et al., 2017).

Barber et al. (2015) studied barriers and facilitators to early mobilization of ICU patients using three separate healthcare professional focus groups including physicians (n=12), nurses (n=6), and physical therapists (n=7). Three major themes were identified as barriers to early mobilization of ICU patients. The first major theme identified as a barrier to mobilizing critically ill patients was the culture of the ICU. The second major theme was communication in the ICU. The third major theme was the lack of resources, which included inadequate staffing, equipment, training, and the increased effort of mobilizing critically ill patients (Barber et al., 2015).

Three major themes were identified as facilitators to early mobilization of ICU patients. The first facilitator identified to mobilizing critically ill patients was an organizational change that included multidisciplinary communication and planning, developing a standard of care, a mobility team, a method to evaluate failures, and family involvement (Barber et al., 2015). The second major theme was leadership, which included senior level support for the program, and support for establishing a mobility

champion. The last major theme was having adequate resources, including more staffing, equipment, and training (Barber et al., 2015).

Krupp et al. (2019) studied factors that nurses consider when making decisions about mobilizing ICU patients. Twenty nurses participated in semi-structured interviews, which resulted in the identification of four primary areas, which were (a) the reason for the mobility, (b) information gathering, (c) developing and implementing the plan, and (d) barriers to advancing the plan. Overall, the decisions made by nurses are complex and are influenced by multifaceted factors related to the patient, nurse, and ICU (Krupp et al., 2019).

All three related studies support early mobilization of ICU patients (Amundadottir et al., 2017; Barber et al., 2015; Krupp et al., 2019). However, due to various factors, early mobilization of ICU patients remains underused (Amundadottir, 2017; Barber et al., 2015), with early mobility occurring in only 45% of ICUs in the United States (Bakhr, Wiebe, McWilliams, Spuhler, & Schweickert, 2015).

### **Early Mobility Quantitative Clinical Research**

The feasibility and benefits of early mobilization in the ICU are well recognized (Hashem et al., 2016). Long-term effects of early mobility in hospitalized patients include an increased ability to provide self care, increased physical functioning, reduced hospital readmissions, and reduced mortality (Hopkins et al., 2016). Similarly, early mobility interventions reduce complications associated with immobility (Azuh et al., 2016; McWilliams et al., 2015; Schaller et al., 2016).

In a review of early mobility clinical studies from 2015-2017, the increased physical activity resulted in significant patient benefits. In two studies comparing early

mobility versus standard care, an increased mobility level at discharge was reported (McWilliams, et al., 2015; Schaller et al., 2016). Mobility programs increase muscle strength and the ability to ambulate, reducing complications (Floyd, et al., 2015; McWilliams et al., 2015), hospital length of stay and hospital readmissions Azhu et al., 2016; Corcoran et al., 2016; Floyd, et al., 2016; Hopkins et al., 2016; Hoyer et al., 2016; McWilliams et al., 2015), and mechanical ventilation days (McWilliams et al., 2015). Patients who participated in an early mobility program had a 22% reduction in home health services with a cost savings of 1.5 million over one year compared a historical control group who did not receive early mobility (Corcoran et al., 2016). Only one study reported mortality rates, which were reduced by 11% in the early mobility group compared to a historical control group. (McWilliams et al., 2015). Table 1 displays the significant findings of each study.

### **Scientific Foundational Research**

Animal and human immobilization studies are presented followed by a summary of the findings. The effects of remobilization in animals and humans are reported followed by a summary of the findings.

**Animal immobilization.** Animal studies evaluated the effects of hindlimb immobilization by either casting, splinting, or suspension by either a body harness, or tail lift suspension. The most significant finding associated with immobility and the inability to bear weight due to immobilization or suspension is the atrophic result in the muscle. In a review of the literature, six animal studies reported significant differences relating to atrophic changes at the cellular level including reductions in muscle mass, weight, or ratio of muscle to body weight (Bebout et al., 1993; Kang & Ji, 2013; Kasper et al., 1990;

Kasper et al., 1993; Kasper, 1999; Kasper & Xun, 2000). Significant reductions in strength, contraction time, or tension were reported (Booth & Kelso, 1973; Templeton et al., 1984). Peak isometric tension and maximal rate of tension development declined after seven days of immobilization (Templeton et al., 1984). Systemic effects of immobilization included significant loss of whole-body weight (Kasper et al., 1990; Kasper et al., 1993; Kasper, 1999; Kunz et al., 2014). Table 2 presents an overview of each animal study and the significant muscle-related immobility findings.

**Human immobilization.** The effect of immobility in humans was studied using limb immobilization or systemic bed rest. Immobility had a negative effect on humans. The most significant finding associated with immobility and the inability to bear weight in humans is the atrophic change in the muscle, as reported in five of the studies (deBoer et al., 2007; Dirks et al., 20016; LeBlanc et al., 1992; Puthuchearry et al., 2013; Suetta et al., 2009). Muscle biopsies revealed atrophic changes that resulted in decreased weight and size of the muscle. Reductions in strength and power closely followed atrophy, as a major problem associated with immobility in humans. Problems of immobility were significant and measured as early as one week from the start of immobilization. Table 3 presents an overview of each human study and the significant findings related to immobility.

**Immobilization summary.** Immobility had negative physiological effects on both animals and humans. The most frequently reported consequence in animals and humans is muscle atrophy. Clearly, immobility is harmful, resulting in changes that are often present within the first seven days.



**Animal remobilization.** The evidence from animal studies strongly reflects negative physiological outcomes associated with aggressive remobilization following immobilization (Kang & Ji, 2013; Kasper, White, & Maxwell, 1990). Several studies indicate that vigorous remobilization efforts can be harmful following immobilization. Kang & Ji (2013) found that five days of remobilization did not reverse the cellular inflammation and negative oxidative stress from 14 days of immobilization. Kasper et al. (1990) found that remobilization using treadmill running, following immobilization, exacerbated muscle injuries (see Table 4). These results suggest that gradual attempts are preferred to intense remobilization efforts.

**Human remobilization.** Human studies of remobilization implemented resistance training after limb or systemic bed rest immobilization. Following two weeks of lower-limb immobilization, then four weeks of physiotherapist-supervised remobilization using resistance training three times per week, younger men were able to reach values above baseline while older men did not fully recover their muscle volume after the training (Suetta et al., 2009). In a second study, Tanner et al. (2015) found that after five days of bed rest, healthy older adults lost 4% more lower limb muscle mass and 16% more knee extensor strength than younger adults. Following an intensive eight-week resistance exercise program, the older adults failed to gain lean leg mass beyond the pre-bed rest level, while younger adults increased the lean leg mass above the pre-bed rest level (Tanner, et al., 2015). Table 5 presents the effects of remobilization after immobilization in humans.

**Remobilization summary.** Early vigorous remobilization leads to muscle weakness, tenderness, and even injury, which can delay or may even permanently inhibit

recovery especially in older adults (Kasper & Xun, 2000). It is, therefore, clearly important to avoid aggressive remobilization efforts immediately after immobilization especially in older adults. Non-aggressive attempts at remobilization following immobilization may result in less damage to muscle cells and complications of remobilization efforts (Suetta et al., 2009). The clinical implication is that patients should not experience significant physiological decline during hospitalization; however, physiological decline is common, especially in older adults, and often results in difficulty with remobilization.

### **Theoretical Framework**

Two theoretical frameworks inform this study. Meleis's overarching middle-range nursing theory of transition is introduced. Next, an author-developed, practice-based mobility model, applicable to individuals post-hospitalization, is presented.

**Meleis's transition theory.** Recovering from a change in health status and level of mobility requires a transition (Meleis, 2012). Chick & Meleis (1986) define transition as "a passage from one life phase, condition, or status to another" (p. 239). Hospitalized, and post-hospitalized patients face a health/illness transition (Schumacher & Meleis, 1994). The health/illness transition may be a singular, but most likely will involve multiple, simultaneous health/illness patterns, resulting in a sequential transition experience, which may increase the fragility and vulnerability of the individual (Messias, Gilliss, Sparacino, Tong, & Foote, 1995). It is, therefore, important for nurses to acknowledge the patterns of all significant transitions of an individual instead of targeting one definitive type of transition (Meleis, et al., 2000).

The patient making a healthy transition develops an awareness and engages in the change, employing personal meaning and cultural beliefs with community and societal backgrounds to develop confidence and the ability to cope with the transition (Meleis et al., 2000). Nurses have the opportunity to intervene at any point in the transition process to assist with restoring the individual to the optimal level of health, function, and self-fulfillment (Meleis, 2012).

**Author-developed, practice-based model.** To inform the research of the early mobility experience in older adults post-hospitalization, an author-developed, practice-based model was developed. Five concepts related to mobility were selected for the model. The concepts were identified from the literature and clinical practice. The concepts include the force of lower limb muscle strength, the intensity of pain, the level of motivation, the extent of physical disability, and the level of anxiety. Muscle strength of the lower limb and motivation have a positive relationship to the level of mobility. Higher force of lower limb muscle strength and level of motivation result in a higher level of mobility. Intensity of pain, extent of physical disability, and level of anxiety have a negative relationship to the level of mobility. Lower intensity of pain, less extent of physical disability, and lower levels of anxiety result in a higher level of mobility (see Figure 1).

### **Summary**

This chapter summarized the research on immobility, early mobility, and the theory that was used to inform the study of early mobility in older adults post-hospitalization. Extensive immobility in animals and humans results in atrophy of the muscle and is a detriment to physiological functioning. Therefore, early mobility is

important to the post-hospitalized older adult's ability to provide self-care and remain independent.

### **Chapter III: Method**

Chapter III includes information about focused ethnography, the methodology for the proposed study. The methodological components are discussed, and include the sample and setting, inclusion and exclusion criteria, recruitment, data collection, and data analysis. Trustworthiness and credibility are discussed followed by the protection of human subjects. The specific processes outlining the study are detailed.

#### **Methodology**

Focused ethnography is a research method that targets a distinct problem within a specific context and among a small group of people (Streubert & Carpenter, 2011; Roper & Shapira, 2000). The focused ethnography process emerged as a method to apply ethnography to shared cultural experiences in defined settings (Cruz & Higginbottom, 2013). Ethnographic studies strive to learn from a cultural group, to describe and interpret cultural behavior, and to understand their worldviews (Polit & Beck, 2017). A broadly defined culture is categorized as macroethnography, while a more narrowly defined focused ethnographic culture is categorized as microethnography (Polit & Beck, 2017). Knoblauch (2005) distinguished focused ethnography from conventional ethnography with several characteristic features including having a focused issue, short-term field visits, the researcher in a field observer role with background knowledge, notes and transcripts, audio or visual recordings, and time intensive data analysis using coding and sequential analysis.

In focused ethnography, culture is central and is surrounded by a distinct community or phenomenon and context, where individuals have certain knowledge about the identified problem (Higginbottom, Pillay, & Boadu, 2013). A commitment of

focused ethnography is to gain the most complete possible understanding of people who are within a certain culture by using documents and other sources of available information, conducting observations within the naturalistic setting, and asking questions to describe what is happening (Roper & Shapira, 2000). Focused ethnography strives to give attention to small components and activities in which people engage (Knoblauch, 2005). The three main purposes of focused ethnography in nursing research are (a) to discover how people from different cultures assimilate health beliefs and practices into their lives, (b) to understand meaning that members of a cultural group assign to their experience, and (c) to study the practice of nursing as a cultural phenomenon (Roper & Shapira, 2000).

Nurses have used focused ethnography to study a variety of topics including the nature of attachment in a NICU (Bialoskurski, Cox & Hayes, 1999), social awkwardness in morbidly obese patients (Hales, de Vries, & Coombs, 2016), the experiences of being diagnosed with tuberculosis in Somali patients (Gerrish, Naisby & Ismail, 2013), and the quality of life after heart transplantation in children (Green, McSweeney, Ainley, & Bryant, 2008). Focused ethnography allows the researcher to better understand the issues and complexities from the participant's perspective (Roper & Shapira, 2000). The research questions in focused ethnography describe experiences within the cultural contexts or within specific groups or sub-groups (Higginbottom, Pillay, & Boadu, 2018). The research findings are expected to have meaning and usefulness in the community or in the healthcare field (Knoblauch, 2005). Therefore, a focused ethnography methodological approach was chosen to study the early mobility experiences of the microethnography culture of patients recently discharged from the hospital.

**Sample and setting.** The researcher refers to a PhD graduate student nurse researcher, who is also the principal investigator. The researcher used purposive sampling for the study. The sample for this study is patients who are 60 years old and older and have been discharged from the hospital after at least a one-week hospital stay.

The researcher contacted area community settings. She provided an executive summary explaining the study to contacts in the community setting (see Appendix A).

The setting for the interviews was in a comfortable and private location of the participant's choice. All participants chose to be interviewed at home. Four interviews were face-to-face, and six interviews were conducted over the telephone.

**Inclusion and exclusion criteria.** Inclusion criteria included adult male and female patients, 60 years old and older, who had been in the hospital for at least one week due to a medical condition, had been discharged from the hospital, and were able to speak in English. The patients could have been discharged home or to a relative's home, or discharged from the hospital, and then admitted to a facility for physical therapy.

The age of 60 was selected based on the changes that occur in the sixth decade and beyond. Diminished muscle function, directly related to decreased muscle mass volume, significantly declines after the age of 60 (Deschenes, 2004). The length of time for hospitalization was selected based on the effect that hospitalization has on patient activity, and bed rest and inactivity have on muscle strength. One week of bed rest results in a significant reduction of muscle mass, strength, and physical performance (Dirks et al., 2016; Puthuchearry et al., 2013) with up to 14-20% reduction in muscle strength (Brower, 2009), and an additional 20% loss of strength for each additional week (Perme

& Chandrashekar, 2009). Despite the negative effects of inactivity, hospitalized patients frequently remain reclined in bed (Welch, et al., 2018).

The researcher invited individuals to participate regardless of when their hospital discharge occurred, as long as the individual remembered the mobility experience. She excluded individuals if they remained on bed rest post-hospital discharge or were unable to participate in a conversation.

**Recruitment.** The researcher provided recruitment flyers to the contacts at the area community settings (see Appendix B). She asked the contacts for permission to post the flyers and to distribute the flyers to potential participants who could call the researcher using the phone number provided on the flyer, if they were interested in participating.

The researcher used a telephone script to screen individuals for inclusion (see Appendix C). If the potential participant met the eligibility criteria and were interested in participating in the study, the researcher set up an appointment for the interview. The researcher also used contacts from a personal circle of influence and snowball sampling for recruitment.

**Data collection.** The researcher obtained written informed consent from the participants before the interviews (see Appendix D). The researcher conducted 10 in-depth interviews with participants. Four interviews were face-to-face and six were conducted over the telephone. Each interview lasted about one hour. The primary focus of the interview was what was like to be mobile after at least one week of hospital-acquired deconditioning related to reduced physical activity.



Pre-determined, semi-structured questions guided the interviews (see Appendix E). In some cases, derivatives of the questions were used. Extensions such as “Tell me more about that...” were included. The researcher voice-recorded each interview. The researcher wrote field notes after each interview. The field notes included general observations of the participant’s natural movement for the face-to-face interviews. Participants received a \$20 gift card from Target.

The researcher collected demographic data to identify the patient cohort group. Data collected included age, gender, and race. The researcher collected additional information from the participants including the length of the hospitalization (days, weeks, or months), the time of the hospitalization occurrence (number of days, weeks, months, or years ago), and the individual’s immediate support system, such as family, friend, or neighbor (see Appendix F).

**Data analysis.** A team of three researchers read and analyzed the data. The research team consisted of the principal investigator who is a PhD graduate nurse researcher and two University of Missouri Saint Louis faculty nurse researchers. Data analysis occurred concurrent with data collection.

The voice-recorded interviews and field notes were transcribed verbatim by the researcher. After each interview was transcribed, the researcher replayed the recording to verify accuracy and correct any discrepancies. The research team analyzed the data collected from the voice-recorded interviews and field notes, which included observations of natural movement.

A systematic process was used for data analysis, which included reading, writing, thinking, and dialogue. The process outlined by Roper and Shapira (2000) guided the

data analysis for this study. The research team read the field notes and word for word transcribed texts several times to become familiar with the data. The team noted similar, as well as different, words and phrases. Each team member contributed and read aloud an independently completed interpretation of the transcript.

Next, the remaining team members provided input on the interpretation and added their personal comments. All team members had uninterrupted time to share their interpretation. A common understanding of the interpretation was reached, and the team noted the important findings. In the end, all members of the analysis team agreed that the interpretations were a direct reflection of the text. The researcher documented notes of the data analysis meetings immediately after each meeting. The notes were saved for reference in the data analysis process.

Each transcript was analyzed individually, to start. One data analysis meeting was held to analyze the first five participants as a group to identify and discuss findings seen as common to the group. The research team used reflective notes and insights about the data from the nurse researcher. Color coding was used early in the data analysis process to identify potential patterns and themes that related to early mobility. Different color sticky notes were used on a large white board to identify potential patterns and themes. The data analysis process was ongoing. Discussions occurred with the team during data analysis meetings about the potential patterns and themes until a consensus was met.

The researcher created excel files to organize the data. Similar concepts were clustered. Once the data analysis team agreed on the patterns and themes, the researcher created one excel file for each pattern and subpattern. The themes were organized within the excel files dedicated to each pattern and subpattern for reference when writing the

data analysis findings. The goal of data analysis was to identify the shared early mobility experiences of older adults who have experienced immobility as a direct reflection of the data from the transcribed texts.

**Trustworthiness.** In qualitative research, trustworthiness indicates quality, authenticity, and truthfulness (Cypress, 2017). The researcher used multiple sources of data including interviews and field notes to include general observations of natural movement, to reveal the complexity of the phenomenon and contribute to an audit trail (Fusch, Fusch, & Ness, 2018). An audit trail is a documented record of the research study including all aspects of data collection (Bowen, 2009). To enhance trustworthiness, the research team included an expert qualitative researcher who helped to guide and review the analysis. The team analyzed the data together, which added rigor and trustworthiness of the data (Bialoskurski, Cox, & Hayes, 1999).

**Credibility.** Credibility, a component of trustworthiness, refers to the accurate description of a participant's experience and inspires confidence that the analysis and interpretations are truthful (Polit & Beck, 2017). The researcher conducted data analysis on the word for word transcription of the accuracy-verified interviews. Immersion at the start of data collection facilitated engagement with the participants and credibility of the study (Shenton, 2004).

**Protection of human subjects.** Institutional review board guidelines were followed. The researcher obtained written informed consent from each participant prior to the interview.

Consents for the study are stored in a locked file. The consents are accessible only to the researcher. The consents will be shredded three years after the end of the study.

Each participant was assigned a participant number. Participant names, numbers, contact and demographic information that was collected on paper are stored in a locked file, and will be shredded when the study is completed. The field notes will be eliminated from the electronic files at the end of the study.

Participants had the option to stop the interview temporarily or withdraw from the study at any time. The transcribed interviews were verified for accuracy, deidentified, and stored on password-protected computers, all of which were accessible only to the research team. The voice-recordings were erased after three months. The deidentified transcripts using pseudonyms to conserve confidentiality of the study participants will be kept indefinitely and may be used for educational purposes. Each participant was given the nurse researcher's phone number, the faculty advisor's phone number, and the phone number of the University of Missouri-Saint Louis's Office of Research. A copy of the informed consent form was provided to each participant.

### **Chapter IV: Results and Discussion**

Chapter IV includes the findings of this focused ethnography study. This study was conducted to determine the shared early mobility experiences of older adults' post-hospitalization who experienced a decrease in mobility-related to hospital-acquired deconditioning. The study findings are the result of intensive and detailed deconstruction and interpretation of the verbatim transcript texts of the participant interviews. The findings reflect the shared experiences of the cohort participants and are supported by exemplars taken directly from the data within the transcripts. One overarching pattern and two subpatterns are introduced and discussed. The participants are described. Chapter IV also includes interpretive summaries throughout the findings and a final summary of results.

The cohort group, also known as the culture in this focused ethnography study, included older adults who were less active than usual during their hospitalization. The reduced activity resulted in hospital-acquired deconditioning and negative sequela. The participants experienced significant difficulty with all aspects of mobility after the period of reduced physical activity they experienced while hospitalized.

The participants shared deeply personal accounts of their immobility, early mobility, and recovery post-hospitalization. The reasons for the hospitalizations varied from participant to participant and included medical, surgical, and traumatic events. Despite the variations in patient conditions, many commonalities of the early mobility experience were found within the cohort.

All participants experienced a significant reduction in their ability to be independently mobile. Their accounts revealed that the effects of immobility extend

beyond physical weakness and loss of strength. Immobility affected all aspects of the cohort's lives, including physical, psychosocial, and emotional. Members of the cohort group shared the extensive negative effects that immobility had on their physical functioning and quality of life. Further, immobility affected the participant's ability to continue working. Participants described feeling vulnerable as they struggled with early mobility and tried to adapt to the reduced ability to function at home.

During the interviews, participants shared long stories about their immobility, early mobility, and recovery. The stories included profoundly distressing events and times in the participant's lives. Members of the cohort group also described small successes, which were viewed as personal victories, and spoke of individuals who were instrumental in their recovery.

The recovery period is often chaotic time in the older adult's life. Participants relived the experience of immobility, remobilization, and recovery with an ebb and flow of events. The stories were not necessarily in chronological order but moved back and forth as the participants recalled their experiences. The vacillation may be because the trajectory of recovery was not always in a forward progression. There were times when the recovery process paused and may have even reversed, before resuming.

Often, physical therapy is utilized to improve physical functioning immediately after hospital discharge. The analysis of the shared experiences of this cohort suggests that patients who experience immobility as a result of hospitalization need assistance with early mobility following the hospital discharge. In addition, long-term follow-up with physical therapy is needed to promote optimal functioning.

### **Participants**

The participants ranged in age from 69-82. There were seven females and three males. All were Caucasian. The length of hospitalizations ranged from 5-6 days to three months and occurred 10 months to 12 years ago. Pseudonyms were assigned by the researcher to preserve confidentiality of the study participants.

### **In-Depth Interviews**

The first four interviews were conducted face-to-face in the participant's home. The next six interviews were conducted over the phone due to the recommendation to stay at home during the COVID-19 pandemic. Participants who were interviewed in person chose to be interviewed alone. Four of the six participants interviewed over the phone chose to have their spouse present during the interview. The participants were asked semi-structured questions and gave lengthy descriptions of their experiences of immobility and remobilization. Their accounts were intimately personal and rich in detail. The interview data and field notes shared with the research team, along with a reflective journal, led to the identification of one overarching pattern and two subpatterns, which subsumed several themes apiece.

### **Patterns and Themes**

The overarching pattern identified from the transcripts is *Mobility is Life*. Two subpatterns are identified within the overarching pattern, *The Crushing Assault: Consequences of Immobility*, and *The Rocky Road to Regaining Mobility*. Each subpattern subsumes several themes (See table X 1). The themes were not well delineated, but often occurred concurrently, overlapping each other. The overarching pattern, subpatterns, and themes are described.

Table 6  
Patterns and Themes

Overarching Pattern <i>Mobility is Life</i>	
Subpattern 1: <i>The Crushing Assault: Consequences of Immobility</i>	Subpattern 2: <i>The Rocky Road to Regaining Mobility</i>
Theme 1: <i>Physiological Consequences of Immobility</i>	Theme 1: <i>Physiological Responses to Regaining Mobility</i>
Theme 2: <i>Changes in Moods and Emotions Resulting from Immobility</i>	Theme 2: <i>Influence of Attitude on Recovery and Regaining Mobility</i>
Theme 3: <i>A Change in Identity Resulting From Immobility</i>	Theme 3: <i>Resources and Strategies to Regaining Mobility</i>

### Overarching Pattern

*Mobility is Life* is the overarching pattern that emerged from the transcripts. The pattern became apparent as the research team completed an in-depth analysis of each de-identified verbatim transcript from the participant interviews. Components of the overarching pattern *Mobility is Life* were found to be deeply woven throughout each participant transcript.

As a result of hospitalization, participants in the cohort group experienced a significant decrease in their mobility ability. Some were not able to walk at all as a result of the hospital-acquired deconditioning. The inability to walk was a new and foreign experience for members of the cohort group, which led to uncertainty about their future. Al was a man of few words. However, the importance of regaining his mobility was evident when he was asked what was going through his mind as he prepared to walk for the first time “I was just praying I could walk a little bit” (Al, l. 90).

The possibility of not regaining mobility was a consistent undertone of the group. Members of the cohort group voiced concerns about the potential inability to continue



life as they knew it. Participants shared thoughts about an uncertain future and worried about the inability to provide self-care. A shared concern of the cohort group was the inability to live a regular life and continue their perceived responsibilities such as working, housecleaning, and even favorite hobbies including gardening and working in the yard.

Geneva, an active retired woman in her early 80's, was scheduled for a major surgery and knew she would not be able to be as physically active after the surgery. She was worried about not being able to fulfill what she believed to be her household responsibilities.

It was spring; I was out there pulling weeds. I was working desperately in the yard to try to get ahead, cause I knew I wouldn't be able to keep up, and that was a big concern. And, I had someone coming so I could get the house cleaned... to suit me, cobwebs out of the corners...under the washer, under the dryer...So, I spent two months getting everything cleaned and ready...So, I was preparing, changed all the beds, washed the curtains, you know, I got ready to be down (Geneva, l. 120-130).

Tom, a diabetic, recounted the importance of mobility in his life after he developed complications following a surgical repair of his leg. He developed an infection, which affected his ability to walk and had an impact on all aspects of his life. "That was no kind of life" (Tom, l. 26). After 10 months, Tom did not want to miss any more of his life and told the doctor, "I'm done. Take - take the leg. I want to have my life" (Tom, l. 24). After the amputation, Tom received his prosthesis, which he refers to as "the leg". Tom's description of the prosthesis as "the leg" reflects the odd experience of using a prosthesis to walk. The first time Tom put "the leg" on and walked, he described the experience as "strange, but it was also very wonderful" (Tom, l. 546). The importance of the prosthesis to Tom was evident when he referred to "the leg" and said,

“more or less, it's become my life” (Tom, l. 246). The prosthesis gave Tom the ability to reclaim his mobility and his life again.

Participants were asked to describe their life before becoming sick. They were quick to describe the full and active life they had before becoming immobile after their hospitalization. Half of the participants were still working when they were hospitalized. Their jobs included being police officers, administrative assistants, substitute schoolteachers, and daycare workers. John describes his life as being wonderful as a police officer. He was “doing a lot, living good, happy, and doing anything in the world... To me, I felt like I was living the good life” (John, l. 121-123).

After coming home from work, many described a normal life, preparing dinner, doing the dishes, and cleaning the house. Working outside, doing lawn work, and gardening was enjoyable to many. Alice described how life had changed after her surgery and said, “I used to, we had a riding mower, and I'd mow all the grass, and trim, and dump things, and have a good day” (Alice, l. 244-245).

Weekends were a time for projects and leisure activities such as taking a walk, shopping, and camping. Dolly had a country property and was always busy with her family on the weekends when she was not working. “On the weekends, we'd go camping... we'd go, we were very active. We were always doing something” (Dolly, l. 308-309). “Puttin up fences, digging holes, feeding cattle, you know, we did it all” (Dolly, l. 312).

Tom represented members of the cohort group when he spoke of having a regular life. “We'd get up, and we'd go to the show, go shopping, just get out and walk around, just have a regular life” (Tom, l. 85-86). The participants' regular life was interrupted

when they became ill, and as John recounts, “I just went and got sick and went down” (John, l. 123). Life quickly switched from a normal life to a life without mobility.

In the absence of a normal life, participants wondered about living without mobility. One of the greatest fears of the group was what would happen if the ability to provide self-care did not return. Participants wondered where they would live and who would provide their care. All members of the group wanted to remain in their own home and did not want to be a burden to their family members. Tom knew he had to work hard to regain his mobility and independence.

I'm going to have to rely on the kids, and that's going to kill me. I just - I don't want it. I don't want it to be - I don't want it to be a drain on my children. I want them to have their life to live (Tom, l. 435-437).

Members of the cohort group did not anticipate the impact that the severe immobility would have on their lives. Geneva shared regrets about the decision to have her potentially life-saving surgery when she said, “I don’t like this. I don’t want this. I wish I hadn’t done it” (Geneva, l. 220-221). Although participants accepted help during the early mobility period, all had a strong desire to return to their pre-immobility level of function.

Many participants experienced a critical illness that resulted in their immobility. Fear was a common finding. June had trouble eating for several months and had lost 50 pounds before she was admitted to the hospital for her surgery. She was extremely weak and worried about her survival and said, “There are a couple of times there, it just kinda hit me like, wow, you know, am I going to get through this?” (June, l. 76-77). June recalled, “I almost crossed the river [Styx] that time, but I had one foot in the river, but it didn’t cross over” (June, l. 621-622).

John did not get out of bed for the three months he spent in the hospital. He became so debilitated from the immobility that he could not hold his head up or even sit up in bed. He had to relearn how to sit up, use his arms, and walk. He recalled being sad and thinking, “if I don't get well, I'm going to be an invalid forever, or I'm going to die” (John, l. 236-237).

The culture perceived mobility to be a critical aspect of life. Many questioned the value of life itself without mobility. Participants wondered if life would be worthwhile without mobility. Vera had been sick for months at home before she was hospitalized. Her mobility status was already compromised on admission. She thought that “if life is – no better - going to be no better than this, I'm just ready to go, you know?” (Vera, l. 254-255).

Tom was struggling to regain his mobility following an amputation. He had an invalid wife who depended on him for her care. He did not want to live with his children or in a long-term care facility. He was determined to regain his mobility. He believed he had “to get back to being independent. Tom’s conviction of regaining his mobility was evident when he said “got to - got to get back to being independent. Otherwise, (long pause) life just ain't worth being there” (Tom, l. 355-356).

Dolly almost lost her leg after experiencing complications of an accident. She had multiple surgeries and was not able to bear weight on the affected leg for over three months. She became very frustrated and would “lay in bed at night and think ‘God, is it even worth it?’ You know, ‘Wouldn’t it have been just better off if I would have bled out?’” (Dolly, l. 653-654). “Would I have been better off to die?” (Dolly, l. 660).

In summary, in the absence of immobility-associated events, adults over the age of 60 enjoy full and active lifestyles that include shopping, taking walks, and even camping. Many continue to work full time. However, hospitalizations lasting one week and longer are harmful to older adults who lose the ability to be independently mobile. The immobility results in a disruption of the older adult's normal life. The disruptions are unsettling, and many wonder what it might be like if they do not regain their mobility.

The loss of mobility results in fear and concern in the older adult about their ability to function independently and provide self-care. The reduction in mobility and health status leads some older adults to question if they will live or die. Still, others question if life is worth living in the absence of mobility. These findings clearly indicate that the ability to be mobile is a fundamental aspect of life throughout the lifespan and that older adults do perceive mobility as life.

It is overwhelmingly clear that mobility means more than moving from one point to another. The ability to be independently mobile invites the opportunity to initiate and maintain personal relationships, engage in social opportunities, and promote and potentially achieve optimal physiological functioning. Mobility is key to an older adult's physiological functioning and encompasses the heart of their very being.

Mobility is a life force: an energy that allows an individual to be their own person. Independent mobility is a crucial aspect of a holistic and fulfilling life. Conversely, immobility can have devastating effects on an older adult's quality of life.

**Subpattern 1.** *The Crushing Assault: Consequences of Immobility* emerged as a subpattern from the transcripts based on the participants' description of the early mobility experience following hospital immobilization and then discharge. Participants were asked

to describe how walking was different after they were discharged from the hospital compared to before they went into the hospital. Three themes emerged within subpattern 1. The three themes are (a) *Physiological Consequences of Immobility*, (b) *Changes in Moods and Emotions Resulting from Immobility*, and (c) *A Change in Identity Resulting from Immobility*.

**Theme 1.** The first theme that emerged from the transcripts was *Physiological Consequences of Immobility*. The participants in this study are older adults who shared a common physical threat, the crushing assault, which reduced their ability to be mobile. All members of the cohort group experienced a significant decline in the level of mobility after hospital discharge compared to before hospital admission. The differences in physical ability pre-hospitalization and post-hospitalization were compelling, and participants were not prepared for the abrupt change in their life.

A shared experience of the group was that participants were overcome with weakness and fatigue. Participants experienced difficulty moving their extremities as a result of the weakness. The weakness, fatigue, and passive physical state of the participants led to a reduction in their physical activity. Many participants experienced setbacks, which increased their recovery time. Setbacks included complications from surgery, new surgeries, and injuries.

John described being flat on his back with tubes going everywhere for three months. He explained that he was not allowed to eat or drink. He became so weak that he said “And I just forgot how to - I couldn't pick up a - a candy bar. My - I just was - was so weak (John, 1. 46-47). He described the severity of his weakness.

You're laying there, and now your legs don't work, and your arms don't work. You can't - you can't even hold your head up. You can't take your hand and grab

your hair, pull your head up. You're just - you're just a big sponge (John, l. 245-248).

Alice described a similar unfamiliar experience she had after her abdominal surgery. "I've always been kind of strong. And then all at once, you're just - it's-it's like your body is kind of like a marshmallow" (Alice, l. 28-29).

Vera spent 7 weeks in rehabilitation before she was strong enough to have her surgery. After her surgery, she was hospitalized for 10 days. She described a sense of disconnection between her brain and her body as she described the weakness she experienced.

It was, uh, a weakness, I've - I've never experienced anything quite like it. I mean, I felt like I - I was in this body, I felt like, I don't know how else to explain it, but the body was there, the mind was ready, and the heart was ready to go, but I just couldn't get everything to cooperate to go with what I was wanting to try to do (Vera, l. 399-402).

Betty spent six days in the hospital after having a thoracic surgery. When asked about the first time she walked at home, she replied, "I couldn't. They had to carry me into the house from the car" (Betty, l. 17). She goes on to describe the extent of her weakness and the obstacles she had to overcome to simply move her body. "At first, it was too much. I was too weak to roll over in bed. They had to roll me over in bed" (Betty, l. 20-21). Betty goes on to share her experience of trying to take a shower and said that:

they had to help me to the bathroom. They had to stand me up and hold me to sit on the chair that you have to sit in when you take a shower. And at that time, we had a tub. So, I had to climb over the tub and then getting to - on the chair and then somebody had to turn the shower on for me. I was so weak (Betty, l. 23-27).

The weakness and difficulty with body movement was an immobility obstacle that participants had to overcome before attempting to regain mobility and move from

one place to another. As participants slowly regained their mobility, most described being too weak to provide their self-care or do household chores. This led to a feeling of being “just completely helpless” (Betty, l. 515).

Movement and mobility required more effort than in the past. Members of the cohort group described being fatigued, which combined with the weakness and physical work of movement, resulted in exhaustion. Alice described the fatigue as being overwhelming. “I slept a lot... I was tired, really, really tired” (Alice, l 270-271)... “So, I - I wore my *couch* out” (Alice, l. 281). Nadine shared a similar experience. She described trying to get up and stated that “It took effort, and the couch became my best friend” (Nadine, l. 342-343).

A shared finding of the group was that the weakness and fatigue resulted in members of the cohort group walking less than usual. The reduced physical activity led to a loss of physiological functioning. Participants expressed sadness at not being to continue the activities that they enjoyed before the hospitalization.

We did - we did it all. You know, took hikes, did, rode, you know, rode a bike, or whatever. Now, I can't do any of that. So, you know, but there - there's a big difference between what I used to be able to do and what I do now (Dolly, l. 316-318).

June experienced multiple setbacks after her first hospitalization. During her original illness, she lost 64 pounds before her hospitalization and abdominal surgery. Then, over the course of five years, she had two heart surgeries, and even with physical therapy, she never recovered to her pre-illness state. “I have never gotten back to being able to do all those things. I – I – I can't do it, you know” (June, l. 685-685), and “I don't think I'll ever be able to do all those things again” (June, l. 703).



Participants were asked if they believed any of their medications had an effect on their ability to get up and around. Several participants discussed the effects of their pain medication. Most tried to refrain from taking the pain medication to avoid the effects of drowsiness, which added to the difficulty of mobilization. However, one exception was Geneva, who recalled that she did better ambulating in the intensive care unit, but stated that “immediately, when I got home, I went down. I got tired. I could hardly walk to the bathroom.” (Geneva, l. 106-108). Geneva was taking pain pills and admits that she “was a little ditsy. I was on - I was on meds” (Geneva, l. 135-136). Geneva explained that she had taken the same pain pills for years and stated that “I got so angry with my favorite person, my PA, and my husband, plotting against me to take away any pain medication.” (Geneva, l. 461-462). It is unclear if the pain medication had an effect on Geneva’s decline in her mobility ability. However, she did describe a loss of functioning after she returned home. The loss of physiological functioning and independence was distressing to the cohort, which led to changes in moods and emotions of the participants.

**Theme 2.** The second theme that emerged was *Changes in Moods and Emotions Resulting From Immobility*. The decreased ability to function and loss of independence was difficult for participants. Frustration was a shared experience of the cohort group. Participants became frustrated at the inability to toilet themselves and provide self-care. Providing personal hygiene is private and having to rely on others for assistance was difficult for most. Geneva stated, “I couldn’t do. I wanted to do. I wanted to be able to do everything.” (Geneva, l. 505). Alice’s frustration started during her hospitalization. She was asked about getting up while she was still in the hospital and replied:

I did (get up) one time before they put the alarm on the bed. I got out of bed, and I pushed the recliner, that's usually in there, around so I could sit in it. But then when they found out I did that; I was in trouble. You know, you can't do that (Alice, l. 161-163).

Alice went on to say that “It made me mad cause they alarmed me all the time, and I could have gotten up and gotten in my little potty chair” (Alice, l. 152-153). Alice describes trying to get up a couple of times, but “they rushed in there and said, don't do that anymore.” (Alice, l. 175-176). She used the call light to ask for help to the bathroom but had to wait and thought, “boy, I can't wait here much longer” (Alice, l. 179). Alice wanted help to go to the bathroom but instead was assisted to the bedside commode. “Well, I tell them I need to go to the bathroom. And that's where I got” (Alice, l. 182). “That's not what I wanted to do.” (Alice, l. 184). “I wanted to get up. And, I needed help, and I needed a walker, or whatever they had for me, but I didn't like sitting in that chair” (Alice, l. 186-187). The bedside commode was unfamiliar Alice was uncomfortable because “you know you're bare in the back, and, you know, who's gonna come in?” (Alice, l. 584-585).

In addition to requiring assistance with toileting, participants became dependent on others for intimate tasks such as providing personal hygiene. The inability to provide self-care was distressing to participants in the cohort group.

My personal hygiene, I didn't want to have to have help with that but, I had to, I didn't want - have - well, you know, I didn't want to have to have somebody bathe me. I didn't want that! (Geneva, l. 26-29).

Dolly shared that she did not like having to rely on someone to help her when she used to be able to provide her own personal hygiene. “It's very personal, and it's embarrassing, and it's degrading, and, you know” (Dolly, l. 244).

John's frustration resulted from the change in his physiological functioning after he was hospitalized for three months. He was a police officer before he got sick and lost 50 pounds. John shared that he used to have good muscles from working, until he got sick. He spoke of the weakness and frustration he experienced from them muscle loss. "It was just frustrating that you want to do this stuff, but your body is just a rag. You can't hardly do nothing" (John, l. 53-54). "I would just lay there. I - I couldn't stand up. I couldn't sit up in the bed. If I needed to be pulled up, I'd have to get somebody to come by and pull me up in the bed to sit me up" (John, l. 80-82). "You can't do anything. It - it's like you depend on everybody to do everything for you. It's very frustrating, and you get anxious of wanting to move to the next level, and you - you - you're just not there yet, you know?" (John, l. 199-201).

Participants were accustomed to being independent and were not used to relying on others for help. The inability to follow through with a schedule or carry out a personal plan caused frustration. In particular, participants were frustrated at the loss of independence and "not being able to do what I want to do when I want to do it" (Dolly, l. 537-538). Alice echoed Dolly's sentiments when she repeated "I wanted to do what I wanted to do when I wanted to do it" (Alice, l. 387-388). Dolly stated that she did not want to be dependent on anyone again. "I've had enough of that. I'm done with that" (Dolly, l. 531).

The frustration experienced by all members of the group led to a sense of being down and depressed. Participants shared that it was difficult to adapt to the loss of independence. "It's not a good feeling when you've always been independent to all at once, you're relying on an apparatus, or somebody" (Alice, l. 22-23). The inability to

complete tasks was overwhelming and brought participants to tears. “I had a lot of frustrations. I cried a lot. And, I was just so tired of - of not being able to get up and do anything for myself, you know?” (Vera, l. 414-415).

Members of the group expressed sadness because they could not perform the physical activities that they considered to be a normal part of their life. Participants could not walk without assistance and could not provide their own self-care. Most had to rely on family members for their personal hygiene, and this was difficult for members of the group. “I was depressed. God, I was so depressed” (Dolly, l. 13). Dolly explains that “it was depressing cause I couldn’t do what I wanted to do for myself” (Dolly, l. 21-22). June gives more detail when she said “I couldn’t take care of myself physically, you know. I had to have help. I had to have that (help) getting out of the bed, you know, like getting on the pot, you know, everything” (June l. 178-181).

Crying was common. “It was horrible. It was just horrible. I cried almost every day” (Dolly, l. 25-26). Participants were frustrated that the effects of immobility lasted longer than they expected. June shared that:

It was already like 24 days, you know, that I’d been going through all this, and I thought, uhhhh, I just can’t do this can’t do this anymore, you know? And I felt really depressed, you know, really sad, and um, teary (June, l. 395-397).

Weather had an effect on the participants. Participants interviewed during the dark days of winter and shared that the gloomy days were difficult. Many wished the temperatures were warmer so they could go outside and enjoy the weather. Alice had her surgery in February and was not able to sit outside and said “I couldn’t go outside because it was in February. And I have often thought, I wish I could have waited because I’ve fixed my front porch. I got my shed, and I love to sit out there” (Alice, 72-74).

Dolly voiced a similar dislike of the dark weather when she motioned to the window to the cloudy, rainy day and said, “the weather doesn’t help any” (Dolly, l. 320).

Time was difficult for participants to comprehend. The present time was dominant. During the period of immobility, participants were home bound and missed the social interactions they enjoyed in the past, before being hospitalized. Recovery was a long process and some participants felt like they lost some time from their life. Participants described being lonely, missing out, and eluded to a desire recover the lost time.

After Dolly was discharged, she was alone at home while her husband worked.

Dolly described sitting in her chair all day and being lonely. She shared that:

There’s nobody to talk to, or, I call my friends or whatever. Some of them are still working, but everybody has their own things, their own lives that they’re, you know, doing, so I just sit here, you know. Even with all my sisters, they all, you know, three of my sisters that are still, that still live here in [town], you know, two of them work and one of them’s retired and she keeps going, ‘Well, we’ll do stuff, we’ll do stuff’, and it never happens (Dolly, l. 323-329).

Vera experienced a 50-pound weight loss during her illness and was in a rehabilitation center to build up her strength before her surgery. Vera described being depressed because she would not be going home after her surgery. She would have to go back to the rehabilitation center for one month and would miss several important family events. She explained that “it was the month of our anniversary, and I wasn’t, but - you know, and just - I was just depressed, and my niece got married, and I didn’t get to go to the wedding” (Vera, l. 444-445).

June experienced a setback after her original surgery and had to have a cardiac bypass. She was looking forward to getting back to her normal life. June describes her disappointment as she waited to get better and return to normal.

I kept thinking, you know, everybody said, Oh, it'll take a year to get over that bypass surgery. And, I think, okay. I've got two more months and a year will be up. I'm going to be back to where I was, you know, back to normal. I was looking forward to that one year and getting better, but I was disappointed. It just didn't happen, you know, and I guess it's never coming back (June, l. 726-729).

Nadine described a long recovery after being hospitalized for two months, and then spending one month in a rehabilitation center. She shared that she experienced a major trauma with a head injury, multiple fractures, and internal injuries. She stated that “I had to learn (walking) all over again. I had to learn a lot of things all over again”

(Nadine, l. 247). Nadine shared that:

I feel like I - at first - and I did, and I still do, I felt like I lost some time. You know, I felt like I did. Some time was taken away from me. And so, it was just a - a matter of getting past that, and, um, I hadn't been angry about it because it did happen and, I just worked toward getting back. But, for a while there, you know it was just kind of taken away (Nadine, l. 482-486).

The abrupt change in the participant's lives led to uncertainty and fear about the future. Participants had never experienced such a sudden change in their physical ability. The change in their mobility status was so severe that participants did not know what to expect.

The uncertainty resulted in fear and concerns about the future. Fear of the unknown included being a burden, having to move to long-term care, and even the ability to survive. Time became a concern. Participants were afraid they would not be able to regain their mobility. Members of the group wondered how long the effects of immobility would last and if they would recover. John's immobility was so severe that in the beginning, he thought that he was “never going to get well” (John, l. 69). Similarly, Al wondered what the future held. When Al was asked what was going through his mind the

first time he prepared to get up he replied “Well, whether I was going to walk again. That was my biggest thing” (Al, l. 43).

Some participants wondered if they would live or die. June shared that “I did think at some point, am I gonna make it through this?” (June, l. 64). John shared that he was afraid because he thought, “I’m not going to get well. That part was scary” (John, l. 203-204). On the other hand, Dolly shared that she sometimes will lay in bed at night and think, “God, is it even worth it? You know, wouldn’t it have been just better off if I would have bled out?” (Dolly, 654). The combination of the changes in the participant’s physical ability to function and the sadness that they experienced resulted in the participants feeling like a different person.

**Theme 3.** The third theme that emerged was *A Change in Identity Resulting From Immobility*. The change in the ability to be independently mobile had a negative effect on members of the group. The participants were used to being independent and leading active lives before going into the hospital. After coming home from the hospital, participants were unable to walk unassisted, and could not toilet or dress themselves. They were no longer able to work, cook, clean, or do other household chores. As a result, participants became dependent on others, and this was difficult for members of the group.

The difference in what participants could accomplish after coming home from the hospital was striking and affected the participant’s self-perception. Participants shared that they did not feel like the same person they were before they went into the hospital. The change in identity was uncomfortable for participants, and they struggled with the difference.

Participants shared how the change in their lives affected their outlook. Dolly expressed sadness that she was no longer able to get up in the morning, take a quick shower, go to work, and do the things that she used to do on the weekends. After coming home from the hospital, she needed help with all aspects of her care. Dolly's voiced cracked as she shared that she felt like she lost herself when she said, "I lost my independence. I lost - I felt like I lost, not family, or anything because they were supportive, but I just felt like I lost myself sometimes because I couldn't do anything for myself" (Dolly, l. 37-39).

A common experience of the cohort group was the difficulty of walking. Before the hospitalization, walking was effortless. After the hospitalization, walking required a deliberate effort and more exertion than before. It was tempting to delay the important task of walking. Geneva shared that her ability to walk during her ICU stay was better than a few weeks after she came home from the hospital. She stated that when she "was in the hospital, the physical therapist would come in...and, we would nearly run. I'd go all the way around that (ICU circle) a couple of times before I got tired" (Geneva, l. 104-107). Then, when she was went home, she did not walk as much. In retrospect, Geneva realized the effect that immobility had on her. When Geneva was asked about how her walking changed over the first few weeks, she replied that "it lowered my - my ability, and looking back, it was probably because I didn't get up enough (Geneva, l. 434-435). She stated, "I was happy just to lay there. I was just lazy. I turned into - I was very slothful. And that was opposite from what my normal behavior was" (Geneva, l. 278-279). Over the next three months, Geneva was not able to regain her strength. She shared that "I still wasn't totally myself when, when I went to my niece's wedding, and then I



fell... It was like dominos (Geneva, l. 354-355). I broke my elbow and my pelvis. It was not good. (Geneva, l. 360, 364).

June got sick and lost 64 pounds. She became malnourished and had to have a major abdominal surgery. After her surgery, she described being distraught and feeling melancholy. She was physically exhausted and feeling down about recovering from her surgery and a cardiac complication. This was distressing to June because she was not feeling like herself. She described herself as a person who usually has a positive outlook and stated:

I didn't like the way I felt because - I - that just wasn't me. You know, I just was not a - a whiny, cryey type person, you know. I'm - I'm more positive and - and you know, have a positive attitude about everything. But there are a couple of times there it just kinda hit me (June, l. 74-77).

In summary, bedrest and immobility during hospitalization results in hospital-acquired deconditioning and weakness. The manifestations of the immobility in this culture of older adults relate to meaning in life, everyday physiological functioning, moods, and identity. The changes the older adult experiences are a significant assault to their mobility following hospitalization. Most cannot walk unassisted. The mobilization difficulty is complicated by weakness and fatigue, which often leads to setbacks and injury post-hospitalization.

The inability to walk unassisted and perform activities of daily living, including personal hygiene and self-care leads to a loss of independence and is distressing. Older adults feel helpless when they return home and are unable to care for themselves. Frustration is common and often leads to sadness and depression.

The immobility experience is a foreign and traumatic crisis in older adult's life and leads to a fear of the unknown. Older adults experience concerns of being a burden to

family members. The threat of moving to a long-term care facility is troublesome. Many older adults are concerned that they will not survive the experience.

The experience of immobility is overpowering, and older adults often experience a change in self-perception of their identity. Many do not feel like the same person. This study supports the findings of Doroy (2018) who found an overall theme of loss of self in patients experiencing immobility in the ICU.

The older adult experiences difficulty with mobility after hospital discharge. The pre-hospital level of mobility is usually not attained post-hospitalization. The findings of the current study support the findings of Gordon et al. (2019) who found that immobility and hospital-acquired deconditioning are problematic in older adults and may result in irreversible functional decline. The current study illuminates the importance of early mobility post-hospitalization to avoid the complications of prolonged immobility and to promote an optimal physical and mental health status of the older adult.

The loss of mobility after hospitalization is a physical and emotional assault to the older adult. The effects of immobility are multifaceted, affecting all aspects of the older adult's life, and have long-lasting repercussions. Older adults struggle with the physical effects of immobility. The exertion required to overcome the loss of strength is overwhelming and often results in an incomplete recovery.

The post-hospitalization period is a dark and gloomy time for many. Sadness and self-described depression are common. Many experience such a significant change in their lives that they do not feel like the same person. This loss of identity may result in feelings of despair and a loss of motivation to continue, further worsening the consequences of immobility.

The effects of immobility are complex and deeply personal. Uncorrected, immobility can worsen, further debilitating the individual. The debilitation is a threat to the older adult's inner being that can affect their quality of life and threaten their essential life force energy. The older adult who is experiencing immobility needs more frequent monitoring and follow up at home. Further, it is a responsibility of the healthcare team to prepare the patient for the difficulty of the remobilization process.

**Subpattern 2.** *The Rocky Road to Regaining Mobility* emerged from the transcripts based on the participants' descriptions of the early mobility and rehabilitation experience after returning home from the hospital. Participants were asked to describe their experiences of getting up and around after they got home. Three themes emerged within subpattern 2. The three themes are (a) *Physiological Responses to Regaining Mobility*, (b) *The Influence of Attitude on Recovery and Regaining Mobility*, and (c) *Resources and Strategies to Regaining Mobility*.

**Theme 1.** The first theme that emerged was *Physiological Responses to Regaining Mobility*. Members of the cohort group described a challenging time in their life as they transitioned from being immobile to regaining their mobility. The transition from immobility to mobility was difficult due to a loss of strength. The loss of strength was directly related to the hospital immobility. Participants experienced the loss of strength as weakness.

As participants began to remobilize, movement and walking required significantly more energy than in the past. Exertion was challenging and resulted in fatigue and exhaustion. As a result, profound weakness, fatigue, and exhaustion were common across

all of the transcripts. Additionally, the cohort group shared a common experience that recovery was hard, and the time it took to recover was extended.

The weakness associated with remobilization was different than the weakness resulting from immobility. The weakness experienced from the crushing assault took on a new meaning as participants began the rocky road to regaining their mobility.

Participants actively struggled to overcome the weakness and loss of strength that accompanied their work of recovery. Participants had to exert a significant amount of energy to rebuild the lost strength and regain their mobility. Participants had to exert a significant amount of energy to rebuild the strength that was lost due to immobility.

A common finding was the difficulty that participants encountered as they began the hard work of regaining mobility. Most were not able to return to the pre-hospitalization level of mobility. Participants did not feel steady on their feet. Members of the group described being weak and not having the strength to walk with confidence. Many were concerned with a fear of falling and the possibility of reinjury. Some were concerned they would not be able to get up if they fell. One participant worked so hard to turn over in bed that she injured herself.

Participants stated that they were weak and felt wobbly. Alice shared that she was not able to do much after coming home from the hospital because her “knees were a little wobbly” (Alice, l. 65). Geneva described her dilemma when she shared that she was not able to do certain tasks for herself because she “was too wobbly” (Geneva, l. 104). Vera was asked about the first time she walked at home, and she shared that “it was wobbly” (Vera, l. 368).

A common finding of the group was a fear of falling. Some participants were afraid of falling and being too weak to get back up on their own. Others were concerned with reinjury or causing a new injury to an unaffected part of their body. Any additional injury would potentially extend their recovery, and this was worrisome. As participants began to walk at home, most used a walker for additional support. Vera shared that three weeks after her surgery, she began to move a little easier, but continued to use the walker because she “didn’t want to stumble and fall” (Vera, l. 266). Alice had a concern with the two sets of stairs that shared a common landing. in her home and said:

Because if I lost my balance you know, you could, well there's steps going up, there's steps going down, that's bad place right there. And I did fear if I didn't use the walker, that I would somehow come over and fall down those steps (Alice, 291-295).

Al shared that he continues to use a cane or walker for support “cause if I fall, I can’t get up by myself” (Al, l. 99). Tom’s paramount concern was to protect his good leg because he did not want another amputation. After losing one leg to complications of diabetes, he worried about falling and injuring his good leg. He shared that he did not "want to get hurt again. That's always in the back of your head. Don't want another injury" (Tom, l. 330-331).

Betty was weak after coming home from the hospital. She was unable to turn from her back to her side when she was in bed. During the night, she had to call for help to reposition herself. The effort required for Betty to turn on her own in bed was more than she could manage, and she described injuring herself on the third day she was home.

I tried to get up on my elbow to turn myself over in the bed. And - my elbow fell down, and I heard it rip three times, and I said to the doctor, three of your stitches came out because I heard them rip. I said, you got to fix me (Betty, l. 217-220).

Nadine spent two weeks in the intensive care unit after being hit by a truck and experiencing massive injuries. She was asked if there was a particular situation that stood out to her when she began to get up, and she described the difficult time she experienced sitting in the chair. Nadine shared:

When we first started, it was like five minutes. That was the hardest thing. And then we moved it to, we added time, to 10 (minutes), and then on to 15, up until I got to 30, but it took a while, and it took my sisters - they would read to me. And I would, even after two minutes, I'd - I'd - I'd say I've got to go back to bed. And so, it was just uh, real hard (Nadine, l. 16-19).

Nadine's weakness persisted from the hospital to the inpatient rehabilitation unit. She described how hard it was to sit in the chair, stating, "I just kept begging to go back to bed. It was just so hard" (Nadine, l. 226-227).

Nadine was asked to tell a story about the first time she walked after leaving the hospital. She described being scared because it had been so long since she had walked that she did not know if she would be able to stand. Nadine said:

That was scary because I didn't - I didn't know if my legs would hold me up. And - and I didn't know, I - when I first started walking, you know, how old people walk? They slide. Yeah, that's what I wanted to do. I just wanted to slide. I didn't want to pick up my feet because it was too hard. So, but anyway, I got where I could do that, pick up my feet and start with the heel first and then - then go from there. And, it was just, um, real - real - first - first few times it was scary for me because like I said, I had not walked in a while, and I just didn't know. I had to learn all over again. I had to learn a lot of things all over again (Nadine, l. 240-248).

John shared that he was flat on his back during a three-month hospitalization. Then, he went to rehab for 30 day. John shared his experience getting up for the first time. He described the physical therapists putting the gait belt around his waist. The therapists assisted him to stand up, but John was too weak to walk. As seen in others, regaining the strength to walk was difficult and took time. John worked to do a little more

each day and was finally able to walk. John felt good about being able to walk again. However, he shared that although he could walk, he was still so weak and that “you could have pushed me, and I would have fell down, you know, but I was walking fine, and that was - that made me feel good” (John, l. 164-165.) One member of the research team described the effort that John required to walk as so intense that it was as though he was having to apply resistance and push against the air to move forward.

Vera was in rehab for seven weeks to build up her strength before having surgery. She shared that physical therapy was hard on her and that after her therapy, she “would be totally wiped out for the rest of the day” (Vera, l. 221). Following Vera’s surgery, she was hospitalized for 10 days. Vera described the effects of her weakness after coming home from the hospital. When asked about her strength, Vera stated, “it was pretty weak. I couldn't - very weak - I couldn't - it was all I could do to get up out of a chair” (Vera, l. 228-229).

Vera did not have physical therapy after coming home. However, Vera was resourceful and explained that she used a family member’s walker that she had at her house. Vera, as others have shared, described becoming dependent on the walker because she was too weak to stand alone without support. Although the walker was helpful, it was also difficult to use. In addition to her legs being weak, her arms were weak, also. Vera explained her dilemma of using the walker when she explained “I got used it to kind of hold me up a little bit because I couldn't hold myself up. And it makes a big difference. You got that - with your arms, cause my arms were weak, too” (Vera, l. 273-276).

Al had a hemorrhagic stroke and spent seven weeks in the hospital, then went to a rehabilitation center for an additional three weeks. He was concerned about his ability to

walk again and prayed that he would be able to walk a little bit. He said that he did not get up to walk until the second week of rehab. Al had not walked for a total of eight weeks. Al was asked about the amount of energy it took for him to get up and walk for the first time. Al was a man of few words and he responded quietly that “it took quite a bit on energy” (l. 92). Al’s realization of his current physical state was evident when he softly said, “it took everything I had to walk” (Al, l. 92).

The work of remobilization and recovery led to fatigue and exhaustion.

Participants described being tired. Some participants spoke of being emotionally drained. Vera shared that getting a glass of water was physically exhausting. She explained that first she would have:

to get up and go get it. You know, it was like you're wore out by the time you went to go get the water, and by the time you got back and sat down, you was out of the mood to drink it (Vera, l. 419-420).

Geneva described being so tired that she “could hardly walk to the bathroom” (Geneva, l. 107-108). June worked hard at her recovery and said “I felt like I gotta do this, you know. I can - I can do this, but at the same time, I thought, Oh God, I gotta stop. You know, I'm tired (June, l. 571-219). The work of recovery was hard. In addition to being physically demanding, working to regain mobility was emotionally stressful. June described having a few days when she was emotionally exhausted and just could not do her physical therapy. She said:

I just didn't think I could do it, you know, and I just said, I just can't do this today. I just, mentally, I think it was a mental thing more than physical, you know, I just was exhausted and wiped out (June, l. 37-39).

Some participants believed their pain medications may have affected their energy level. Dolly did not want to take her pain medication during the day because she would



“sleep a lot (Dolly, l. 391). She said “I’d sleep all the time, you know, so I thought I won’t do that. I don’t want to take the pain medicine because of that” (Dolly, l. 560-561). Alice shared that when she took her pain pills that she slept a lot and was “was tired, really, really tired” (Alice, l. 270-271).

Even 3 ½ years later, Dolly still described the difficulty she faces functioning every day and said "it's more hassle to me, or it's harder for me to function every day, to do the things that I would like to do. "It’s exhausting. It’s exhausting being me" (Dolly, l. 343).

Rehabilitation was slow. A shared finding of the group was that participants did not anticipate the lengthy recovery period. Al spoke for the group when he said, “you can lose it in a hurry, but it takes a long time to get it back” (Al, l. 70). Some anticipated that it would take a year to recover. Most never fully recovered from the physiological effects of the crushing assault, which precipitated their immobility. Only one participant shared that there was no change in the ability to walk after the hospitalization compared to before the hospitalization.

Participants believed that it was important not to do too much at one time. Alice shared that it took her “probably two months or so, because you have to build that back up slowly, and slowly, and slowly, and you have to use your walker to walk” (Alice, l. 41-42). Betty shared that she had to listen to her body. She said, “listen to your body, and it’ll tell you what you can and can’t do.” (Betty, l. 325-326). John told a story about slowly building his endurance with physical therapy during his hospitalization. He was doing all that he thought he could to get better and said:

So, you think you're doing all you can, okay, and it was, give me just a little bit more. You know, in the beginning, it was stand up. Then, it was walk to the door. Then, it was walk out the door, and all this took forever, seemed like. And, um, but they kept getting you to do more, and more (John, l. 24-27).

June said that she was told that it would take a year to get better. She followed the orders of her doctor, kept all her physical therapy appointments, and did her exercises at home, but her activity level did not return. June shared:

I kept thinking, you know, everybody said, Oh, it'll take a year to get over that bypass surgery. And, I think, okay. I've got two more months and a year will be up. I'm going to be back to where I was, you know, back to normal. I was looking forward to that one year and getting better, but I was disappointed. It just didn't happen, you know, and I guess it's never coming back (June, l. 726-730).

Nadine had a long recovery from multiple injuries and shared that after two years, she is able to walk on the sidewalk in her neighborhood but admits that “it was a long road” (Nadine, l. 236-237). She said she moved at a snail’s pace and remembered that at first, she “just wasn't strong, and so it took a while. It took - it really did - it took a while to gain any strength” (Nadine, l. 342-343). Nadine is an example of how attitude matters. She had extensive soft tissue, bony, and neurological injuries, but was able to functionally recover and live independently. During data analysis, it was discovered that participants had different approaches to their recovery, leading to the naming of theme two.

**Theme 2.** The second theme that emerged was the *Influence of Attitude on Recovery and Regaining Mobility*. During analysis, the data revealed that members of the cohort group had different attitudes toward their recovery. Some participants had a pessimistic attitude toward their recovery. These participants focused on the negative effect that immobility had on their lives. Other participants had a positive attitude toward their recovery. These individuals focused on what they could do and not what they could not do.

Some participants focused more on their state of illness and dependency, rather than on their recovery. These participants did not seem motivated and did not set personal goals. As a result, participants who did not have personal goals did not progress as quickly as the participants who were motivated and did have personal goals. These participants described more feelings of frustration, anger, and dependency. Several voiced regrets about their choice to have surgery or the outcome. Interviews with this group of participants were full of can'ts and regrets, and occasional blame.

All activities of recovery require more energy than in the past. Geneva described being frustrated with the amount of energy required to walk and talk. When asked about how her weakness affected her ability to get up and walk, she replied, "Oh physically, yeah, that but, emotionally, it just made me tired. More tired. I don't like this! I would say. I don't want this! I wish I hadn't done it" (Geneva, l. 220-221). Geneva found that just talking would make her tired. As a result, she shared her thoughts on talking. "It's amazing that talking takes so much energy. It's amazing! Well, I figured out that it will wear you out. Yep. I learned that – and I didn't wanna talk" (Geneva, l. 180-181).

Dolly's pessimistic attitude extended from being in the hospital through and after her recovery. During the hospital stay, she shared that she "didn't want anybody pickin on me, or touching me, or you know, the shots, I was done with it all" (Dolly, l. 14-15). She shared the frustration of dependency and the inability to help herself when she said, "I just couldn't do anything for myself, and, and to this day, I can't" (Dolly, l. 48). Exercise could have helped Dolly to build her strength. She had the opportunity to go to the local recreation center. However, the lack of motivation is evident. Dolly described the amount of energy required to go to the gym:

I can go to rec center, and they have a pool, and they have, you know, because of my age, and because of the insurance that we have, I - you know, can go and, you know, participate in all, use all the facilities and stuff. But to do it is just exhausting, and it's just like, why bother? You know, it's like this is as good as it's gonna get, why bother? (Dolly, l. 267-272).

Other participants had a more optimistic attitude. The participants who had a positive attitude looked to the future and worked hard to regain their mobility and sense of self that had been lost. They were motivated to get better, set personal goals, and worked to achieve the goals. They developed relationships with the nurses and therapists who cared for them and celebrated meeting goals as mini milestones. The interviews with participants who had an optimistic attitude were full of hope and gratefulness.

Although Nadine had many obstacles to her recovery, she kept a positive attitude. In addition to recovering strength lost from immobility, Nadine faced recovery from neurological damage due to a head injury. She shared that she had 11 therapists. In addition to physical and occupational therapy, she had speech therapy. She shared her thoughts after she was able to understand what happened. "After I – I realized, you know, what had happened, and what was wrong with me, and how much I had to go, uh, I decided to shoot for the stars" (Nadine, l. 76-77). At home, Nadine would walk the length of her kitchen counter, holding on for support. She would go "back and forth, and then, I'd wear myself out, and I'd have to sit down the wheelchair" (Nadine, l. 183-184) Nadine shared that she would challenge herself. After she was released from the hospital, she went to her sister's house. She would walk down the hall, and use the walls for support, if she had to but would try not to.

With the help of the rehab team, Nadine took responsibility for her part of recovery. She said "I have control over what has happened and - not the accident, but,

you know, what happened since. Yeah, I've had control, and it's uh, mind over matter” (Nadine l. 541-543).

Little things mattered to participants. Nadine shared how she celebrated her achievements. After she came home from the hospital, her sister would accompany her, and they would share a treat as a reward for Nadine’s hard work.

Yeah, I celebrated a lot of different steps when I - achieved things myself. I - especially after I came to - came home, and my sister came. We went out and, you know like, going dairy queen, getting a blizzard or, buying something small just to reward myself (Nadine, l. 419-422).

Tom shared his motivation to get better after losing his leg. He provided full care for his chair-bound wife at home. “Well, I've always felt responsible, but yeah, even more so now. Because she - she does rely on me, and I have to rely on me” Tom, l. 419-420). He goes on to say that “once I made up my mind that I was going to do it - it no longer became an issue” (Tom, l. 348). Tom shared “I was bound and determined. I was – I was going to walk, and I was going to get back to living” (Tom, l. 350-351).

John is another individual with a positive attitude who faced a significant recovery after his immobility. John spent three months in the hospital and states “I laid on my back and had tubes going everywhere, and I never got to get up” (John, l. 43). John shared that he had to relearn everything. John described the various equipment he would use during his physical therapy sessions. He described one that was particularly challenging to him.

They have a foam rubber mat, and that's got a handrail so you can hang on to the handrail, and the lady says, I want you to step up on this foam rubber mat. And I'm hanging on to that handrail, and I could NOT make myself stand on that foam rubber mat. It - it was like, it's going to throw me off. So, I got off of it and I - every day I'd have to get back on it for a few minutes, and I got on it one day, and I told her, I just want you to watch. I took my hands off the handrail. She said, well, that's great (John, l. 267-272).

John shared his motivation to get better:

I wanted to get well. There's a lot of places that we like to go. I'm a - I like to travel a lot and go places, and there's a lot of neat things I want to do, and I can't do them if I'm laying in a bed or in a wheelchair (John, l. 339-341).

Independence was important to participants, especially with self-toileting. John's celebrated the first time he got to go to the bathroom on his own. He shared "The most exciting thing of the whole deal was the day I got to go to the bathroom by myself" (John, l. 61-62).

This study was conducted during the winter months and participants shared that weather did have an effect on their motivation. Gloomy weather put a damper on the participants' spirits. Dolly motioned to the overcast weather outside and said, "the weather doesn't help" (Dolly, l. 320). Many looked forward to the warmer weather of spring and summer and getting outside. June was looking forward to enjoying her son's pool. She shared that he had extra steps and a rail installed to make getting in and out of the pool easier. She shared that she was looking forward to using the pool in the summer. "I just hope I can, you know. I love to swim. I love the water, and I would love to be able to do it, and I plan on doing it if I physically can" (June, l. 718-719). Geneva enjoyed gardening and said, "I'm waiting for spring, and I'll be ok" (Geneva, l. 374).

**Theme 3.** The third theme that emerged was *Resources and Strategies to Regaining Mobility*. A common finding of the group was that the work of rehabilitation and recovery was not easy. Multiple resources to support the recovering patient on the rocky road to recovery promoted a successful recovery. Family, the medical team, and the use of use of various assistive devices aided the participants in overcoming immobility.

Additionally, personal strategies developed by the recovering participants facilitated the rehabilitation process in the transition from immobility to mobility.

Family was the single most important resource to participants. A supportive family provided assistance with personal hygiene and activities of daily living, meal preparation, and medication administration. Several participants moved in with their family or had a family member move into the participant's home for a while. Family members prepared the home by rearranging furniture, purchasing equipment, and minor home remodeling. Family members would maintain close physical proximity to quickly respond to the participant's needs. Providing companionship was remembered by the participants.

Dolly moved in with her daughter for three weeks after being released from the hospital. She was in a wheelchair and could not walk unassisted due to an injury. She shared how her daughter would dress her wound at night and help her get dressed in the morning before leaving for work. Then, her grandson would assume her care:

He got my food for me. He got my medicine for me. He took, he wheeled me to the bathroom door, and I got up and took my walker from there to go to the bathroom. He'd hear the water running when I'd wash my hands, and he'd go, OK Grandma, I'm right here. You know, open the door, turn around, and you can sit in your, I got your wheelchair locked, you know, he told me. He took care of me (Dolly, 160-164).

Nadine described how her family updated her home. New toilets, grab bars, and laminate floors were installed to assist her in the transition home. Nadine believed the changes were minor but would make things easier for her. She thought "well, I won't use all these, um, for very long, but I got to thinking, you know, in the future, I'll need them" (Nadine, l. 437-438).

Geneva shared the experience of a delayed response to the value of assistive devices. Her family was trying to help and purchased a shower chair. However, Geneva became upset and said, “I don’t want it,” but later said, “I’ve changed my mind. I do need that” (Geneva, l. 294-296).

Geneva shared how her son prepared for her arrival home:

My son got our neighbors to come over here and move the dining room table and the chairs, and all the stuff went upstairs, and (he) pulled the trundle bed out from under the bunk, brought it down, set it up, fixed it nicely. When I came in, it was like a hotel. It was beautiful! (Geneva, l. 311-314).

Geneva slept on her bed in the living room, and her husband slept on the couch beside her. She shared that:

Every time I wiggled, he got up. I never, ever would have thought that would have happened. So, I guess, I’d have to say, that’s certainly a positive thing, that people, that people do what is necessary. It comes out (Geneva, l. 316-319).

Like Geneva, Dolly shared the support of her family during the night. Her grandson slept in the same room, “so he could be by me if I needed something in the night” (Dolly, l. 152-153).

The medical team played another important role in the participant’s recovery. In addition to the professional expertise, the team provided encouragement during rehabilitation. As participants made progress, they developed trust which facilitated the recovery process. June shared “I just feel like I just had all my faith and confidence in my doctors and nurses, you know, I just did” (June, l. 803-804). Participants appreciated the nurses who encouraged them and lifted their spirits. John was grateful for the nurses who encouraged him to move when he felt like it was more than he could do. Alice appreciated the nurses who cared for her after she went home. She described the nurses as



kind and shared that “nurses can do a lot for a person – how they feel” (Alice, l. 564-565).

Although participants did not always enjoy the work of recovery, they described enjoying the time they spent with the therapists. “I enjoyed those women; they were all female. I enjoyed them. I didn’t look forward to them coming because I thought oh shoot, I’m going to have to get up and do this, you know (Geneva, l. 394-395).

Participants described strategies employed by the therapists to facilitate their progress. Geneva shared that there were times when she was reluctant to walk but was encouraged by the therapist who motivated her to walk by suggesting she start with short distances. Geneva told the therapist:

I really don’t want to do this. They’d invariably - they would say, ‘I know you don’t, and I don’t blame you, so let’s just start real easy’. And, then they’d get me into - and then, I’d feel better, and then we’d go. They’d say, ‘Do you feel like going to the kitchen?’ Now, I’m walking along with a cane. Yeah, I think I can do that. So, they were great to get me up (Geneva, l. 386-391).

At times, participants would bargain with the therapists to avoid the work of therapy. Nadine tried to delay her therapy:

I told them. you look awful good today. Can't we just sit here, and I'll just - I'll just stare at you, and I promise, we'll do this tomorrow. And, she says, no, we're doing it today, and we'll do it again tomorrow (Nadine, l. 129-132).

Vera had a similar experience. She described being totally wiped out for the rest of the day after physical therapy. She shared that on “some days I did not even feel like going, and they'd say, well we'll come get you that afternoon. You couldn't say no, I don't want to because they'd either get you in the morning or the afternoon” (Vera, l. 221-223).

Participants realized the value of therapy and were grateful for the therapy team. Alice shared that ““When I went into physical therapy, they started working on me, and

they did a lot for me - a lot” (Alice, l. 221-226). Betty was grateful for the physical therapy she received “because they worked muscles I didn't know I had, and I wasn't necessarily working those muscles when I was here, you know, just doing housework and stuff” (Betty, l. 314-315).

John remembered that he did not understand why part of his therapy involved putting the round balls and squares pegs in the holes:

I didn't understand it at the time, but the more I was doing it, the better I was feeling, and the more I could do. And, I told them the whole time if everybody will listen to them, they will make you well. They did it for me (John, l. 32-34).

In addition to the therapists, participants appreciated the nurses who encouraged them and lifted their spirits. John was grateful for the nurses who encouraged him and said:

They would push you and make you do. And at the time, you think that's more than I can do, but they know, all you nurses know. We have to get em moving. If we don't, they're not gonna stay with us. So, I felt good that they was making me move (John, l. 19-22).

Alice shared her experience with her home health nurses and shared how she enjoyed the nurses because they were so kind. She shared that “nurses can do a lot for a person – how they feel” (Alice, l. 564-565).

After discharge, participants were not able to walk alone and required the use of assistive devices in their recovery. All participants used a walker. A common finding was that most participants were not able to use the walker unassisted due to a loss of both arm and leg strength. Participants arms were too weak to hold themselves steady with the walker. A few used a wheelchair for waiting for definitive treatment. Some participants mentioned using a cane. One participant used a prosthesis to walk.

A common finding was the inability to use the walker to go to the bathroom alone at night. Participants were unable to release the walker to turn on the light switch. Vera described the difficulty she faced using the walker because her arms were so weak. She was unable to release the walker to turn the light on. Her husband would have to:

get up and flip the lights on for me so I could see to get there. And then when I got down, it was like it was all I could do to get - get it pulled up. I couldn't pull myself up with a walker there. Sometimes he had to help me, help pull me up (Vera, l. 28-30)

Tom shared the importance of his new prosthesis, which he called the leg. The prosthesis not only provided him with the ability to be mobile again, but also the ability to regain control of his life. Tom was asked about the prosthesis. He shared that he was concerned about learning how to use it and if he would be up to it. He wanted to be sure “that it worked” (Tom, l. 583) “Cause if it didn't, then I was - I was pretty much done. And that - that was a worry - scared the hell out of me” (Tom, l. 585-586).

Another common finding was that participants were eager to regain their mobility and created personal strategies that allowed them to be more independent. They described holding on to counters, furniture, and walls for support, which they called wall-walking. Others used special pillows, rolling chairs, and bouncing on one leg for balance. Several discovered that they could walk down the stairs if they turned around and walked backwards down the stairs. Others described strategic walker placement to aid in their mobility. Most shared that all aspects of mobility required more time and planning.

Geneva's surgery was eight months ago, and she shared that she still needs support when she walks. She described being wobbly and that she had to furniture walk. She paused and said, “and I still don't get too far away from something” (Geneva, l. 113).

Betty described being so weak that she could not turn over in the bed for four or five days after coming home. She described feeling like she was in a feather bed and could not move. She was given a full-length bed pillow which assisted her to turn in the bed until she gained enough strength to turn on her own.

Alice was having trouble walking after her knee replacement surgery. She was afraid her knees would give out if she waked on her own. She used a rolling chair to move around. She shared that she could “go where I wanted to go. I could go, well, anywhere here in the kitchen, it gave me a little bit of independence” (Alice, l. 107-108).

Tom had to learn to use the walker with only one leg after his amputation. He realized that he could get his balance if he bounced on his good leg before he started walking. He described having good arm strength from using the walker but stated that it was:

a little difficult at first, but once I learn the tricks - bouncing on the good leg and, I had the upper strength anyway from using the walker and everything. So, that was - that was not a problem there. Just lift - lift myself up out of the chair and stand on the good leg and then had, like I say, I had the walker in front of me, just grab a hold of it and take off and go (Tom, l. 126-130).

Participants discovered that it was easier to manage stairs if they were positioned backward. Geneva realized that she could go down the steps to her family room. However, she had to turn as she described “like a little kid, but I had to come backward going down the stairs” (Geneva, l. 228-229).

Dolly returned to her home after spending three weeks at her daughter’s home. She shared that she could not bend her knee or bear weight on her leg. She was creative and described how she “got out of the wheelchair and backed up the steps on my butt

until I could stand up with my walker” (Dolly, l. 440-441) until her family could get her wheelchair up the stairs.

Several participants described using a strategic walker placement to facilitate their mobility throughout their home. Alice shared that she would “use my walker, get up, park it at the bottom of the stairs, get up the stairs, had another one at the head of the stairs” (Alice, l. 282-284).

Nadine returned to her home after a lengthy recovery from a neurological injury. She described how she modified a technique she learned during her rehabilitation. She shared that she was in a wheelchair most of the time but that she:

used the walker some, and then when I got used to using it more, I challenged myself. Just me doing it. And, I would put the walker down at the end of one of her halls and, just head out. And I knew that I would have the walls on either side, that I could kind of wall - wall walk if I had to. But I would try my best not to. That was my one challenge (Nadine, l. 52-56).

All activities took more time and planning. Many shared that the spontaneity in their lives was lost. Car trips required more work. Camping was a favorite pastime but was too much trouble now. Walking across the room or bending down to pick something up from the floor required thinking about how to complete the task. Life required more work after the crushing assault. Most adapted but still were not able to return to life as they knew it.

June shared that she used to watch her grandson and spent a large amount of time with him requiring:

a lot of body movement, and a lot of walking, and a lot of, you know, going places and going to the zoo, going to - to places. We don't do that anymore. I have to think about everything. I do. Even - even bending down picking up a piece of paper that falls on the floor, you know. I mean, it's just not the same (June, L. 695-698).

Although Tom received a prosthesis and regained his mobility, he described that when he used the prosthesis, he had to:

think about stuff. You got to think more about things than you normally would. Normally you want to do something, you just get up and go and do it. Now I got to think about what I'm going to do, whether I'm gonna do it. Yeah, it changes your life big, big time (Tom, l. 257-261).

In summary, early mobility is challenging to older adults who have experienced immobility during hospitalization. The immobility is a direct result of decreased physical activity and bed rest. This study supports the findings of Suetta et al. (2009), who reported that older adults are more likely to have periods of bed rest during hospitalization, which leads to a loss of muscle mass and weakness with poor muscle recovery.

Regaining lost strength from immobility is physically demanding to the older adult. The aging process leads to a loss of muscle mass and strength, resulting in weakness and potential disability in older populations (Seene & Kaasik, 2012). The physical exertion required to overcome the weakness results in fatigue and exhaustion as the older adult struggles to regain the lost strength. Further, the findings of this study support the qualitative early mobility studies, which focused on ICU patients, and found that weakness and fatigue were common (Corner et al., 2019; Doroy, 2016; Laerkner et al., 2018).

The work of recovery is a long and slow process. This study found that the older adult is aware of the need to avoid overexertion during recovery. The real-life experiences of the participants in this study validate the findings of Kasper & Xun (2000) who found that early vigorous remobilization can lead to muscle weakness,

tenderness, and even injury, which can delay or may even permanently inhibit recovery, especially in older adults.

Attitude makes a difference in the recovery process. Individuals who are optimistic and motivated to get better recover faster and to a greater degree than individuals who are not optimistic and who are not motivated. Those who are optimistic actively participate in the recovery process, set personal goals, and focus on what they can do. Individuals who are not optimistic do not show evidence of setting personal goals or a motivation to get better. They linger in their current state of immobility and focus on what they cannot do, which results in a temporary pause in their mobility recovery.

Older adults who are recovering from immobility need support. Family provides the main support system. Family members prepare the home for the older adult's arrival. Additionally, the family assists with personal hygiene and meal preparation. The older adult who is recovering from immobility is often surprised at changes in the actions of their family members. An example is the family member who alter their personal sleeping arrangements to be physically near the recovering older adult. The proximity allows the family member to be available to assist with repositioning and toileting during the night.

The healthcare team is an essential component in the older adult's recovery from the crisis of immobility. Physicians, nurses, and physical therapists are part of the medical team. Members of the team bring professional knowledge and expertise to assist the older adult in recovering lost physiological function. Additionally, they provide emotional support and encouragement to the recovering older adult. Older adults fondly remember the emotional support and encouragement provided, even years later.

Older adults require the use of assistive devices to aid in regaining mobility after developing weakness from hospital-associated immobility. The most common device used is a walker. However, the walker is difficult for the older adult to use because in addition to losing leg strength, arm strength is lost during the crisis of immobility. As a result, the older adult is still unable to fully function, even with the use of the walker, because the arms are unable to release the walker to complete tasks such as turning on the bathroom light at night.

The recovery from immobility is especially challenging for the older adult who has weakness and loss of strength after hospitalization. Coupled with the naturally occurring loss of muscle mass that accompanies the aging process, the inability to complete activities of daily living because of weakness and fatigue is difficult and can be discouraging.

Patients come to the hospital to get better when they are sick. They should not decline while under our care. However, patients do decline while hospitalized. Gordon et al. (2019) found that immobility in older adults who are hospitalized may lead to irreversible functional decline. Patients trust us with their lives, and it is the responsibility of the healthcare team to prevent physical decline while the patient is under our care in the hospital. Preventing functional decline will avoid the hard work, weakness, fatigue, and exhaustion associated with hospital-associated immobility, and therefore avoid the need for long-term therapy.

If the functional decline is not preventable, it is the responsibility of the healthcare team to assist the individual to the highest level of functioning that is possible. It is easy to use the rationale that the older adult is not able to tolerate physical therapy and the



recovery process of rehabilitation due to weakness, fatigue, and exhaustion. However, therapy sessions can be planned to be slow and progressive as the patient tolerates.

Recovery and rehabilitation from immobility is slow. Older adults who experience immobility are not prepared for the extended period of hard work that accompanies a successful recovery. Individuals facing a potential crushing assault and loss of mobility should be prepared before the hospitalization for the likelihood of a long recovery.

Attitude matters. Older adults with a gloomy outlook dwell in their current state of immobility, as if they had no control. A loss of control can lead to malaise and despair. Recovering from immobility is hard work, and individuals who are unhappy face additional challenges, and a poor potential for maximum recovery.

Older adults with a hopeful outlook have a long-term goal of recovery but focus on small, successive goals. Setting and reaching small goals during recovery allows the participant to make gradual yet steady progress. The personal triumphs experienced when the goals are met propel the participant to continue moving forward. Celebrating achievements keeps the momentum going during a time that can be both physically and emotionally challenging to the person recovering from immobility.

The ability to look for the light at the end of the tunnel is essential for a successful recovery. Those who are hopeful and optimistic rise above those who are not. Hopeful individuals who are optimistic look forward to the future and a return to enjoying the simple pleasures in life; being in the garden, family time, and warm weather.

A loving family and supportive medical team foster recovery of the older adult by promoting a feeling of care. It is important for those individuals who are recovering from

immobility to take time to develop relationships. Having a sense of humor helps. A significant amount of time is spent in recovery. Having a good relationship with those who are providing the treatment to get better can make the transition less burdensome and more enjoyable. The older adult experiences the caring actions of a nurturing family as uplifting, which add a sense of hope to their future. The individual who has a perception of care versus treatment is grateful and recovers faster and to a greater degree than the individual who perceives their recovery as treatment based only.

Assistive devices are a fundamental component of the older adult's recovery from immobility. Walkers are used most commonly at discharge. However, older adults have difficulty using the walker because of the loss of upper extremity strength.

It is important to note that some older adults do not receive physical therapy at home after being released from the hospital. These individuals are at risk for injury due to the loss of upper extremity strength and inadequate instruction in correct use of the walker. Thus, a critical aspect of an optimal recovery of the older adult is the inclusion of physical therapy to build both upper and lower extremity strength and to teach proper use of the walker, and cane, should the individual progress to a cane.

### **Summary**

*Mobility is Life*, the overarching pattern identified in this study emphasizes the importance that independent mobility has to the older adult. Mobility is more than physical. Mobility is a fundamental aspect of living a fulfilling life. The ability to be independently mobile invites opportunity and increases meaning in the older adult's life.

Conversely, immobility has consequences that negatively affect the older adult's quality of life and may lead the individual to question life itself. Immobility in the older

adult may result from the reduced physical activity associated with hospitalization.

Hospital-related immobility lasts longer than the hospitalization itself. The effects of immobility pose a severe physical threat to the wellbeing of the older adult. Although the negative effects of immobility may be insidious, they are powerful and long-lasting in the life of the older adult.

The two subpatterns identified in this study are *The Crushing Assault: Consequences of Immobility* and *The Rocky Road to Regaining Mobility*. This study revealed the human experiences of being immobile and working hard to recover. Participants in this study experienced a blow to life as they knew it and had a hard time recovering. The experiences of the participants who endured a crushing assault resulting in immobility, and then traveled the rocky road to recovery can help healthcare professionals understand the meaning that mobility has to the older adult.

The cohort's common experiences are multifaceted and include overwhelming weakness, fatigue, and many losses. Older adults who are immobile experience a loss of physiological functioning resulting in a loss of independence. The loss the participants experience results in frustration, sadness, and a fear of the unknown. Further, this study shows that older adults place such a high value on their ability to be mobile that their identity is threatened when they are no longer able to be independently mobile. Repeated assaults burden older adults who may believe the task of regaining their mobility is too difficult to manage.

Older adults experience an arduous journey to regaining lost mobility. Coupled with weakness and fatigue, the demanding work of remobilization is challenging. Older adults are encouraged by a supportive family and healthcare team. The support from the

healthcare team can provide inspiration to the older adult during a time when they may not feel they can continue.

Attitude can make a difference in the older adult's recovery progress. Those focusing on positive experiences had better outcomes than those focusing on the challenges. Older adults who are motivated to get better develop personal strategies that allow them to progress their mobility in an innovative manner. Additionally, participants recovering from immobility benefit from the use of assistive devices. However, the full benefit of the assistive devices was not always recognized. Participants who had lost upper arm strength could not use the walker to the full capacity.

The work of recovery is hard. Time does not heal the effects of immobility. Recovering from immobility is an active process that does requires time but also requires extended and intentional efforts. Getting better takes significantly longer than the time associated with the physical decline. Most older adults do not return to their prior level of physical function and may experience disappointment with their recovery outcome.

Early mobility is more than preventing immobility-related complications of weakness and loss of muscle mass. Early mobility may facilitate the older adult's recovery by preventing a loss of physiological function and the decline associated with feelings of depression and social isolation. This study reveals the extremely difficult challenge that older adults encounter after hospital immobility and highlights the need for rehabilitation when mobility has been threatened.

This study contributes new knowledge to the scientific literature of the early mobility experiences of older adults after hospital discharge and has implications for practice, education, policy, and research. The implications are discussed in Chapter V.

## **Chapter V: Implications**

### **Implications for Practice**

An important aspect of nursing practice is to recognize the damage that immobility presents to the older adult and intervene early. Nurses should strive to prevent immobility and the associated complications of weakness and loss of muscle strength rather than depend on the recovery attempt post immobility. Nurses can assess the older adult's mobility status on admission and set goals with the patient to avoid losses of mobility. Nurses can propose and implement early mobility programs addressing hospitalized patients who are anticipated to experience potential immobility during their hospitalization. Early mobility programs do not need to be complex.

This study suggests that nurses and nursing staff should be assisting patients to walk to the bathroom instead of relying on a bedside commode. The simple inclusion of offering more frequent mobility assistance may prevent the loss of muscle strength associated with immobility during hospitalization. Early mobility that progresses the level of activity based on individual patient response is the ideal way to promote the most rapid recovery of the patient (Kasper, Talbot, & Gaines, 2002).

Although bed alarms are used frequently in care of the older adult, bed alarms are a deterrent to mobility. Older adults who are capable of getting up are instructed to remain in bed until assistance is available. If the older adult requires a bed alarm to reduce the risk of fall, it is important to monitor those patients, not only for falls, but also for toileting needs. Further, to reiterate, when possible, older adult patients should be assisted to the bathroom for toileting instead of relying on the bedside commode.

Patients who have been immobile in the hospital need follow up at home. Recovery is possible but requires intervention. Older adults with a decreased physical ability who are not fully functional at discharge need long term support of the healthcare and therapy team. The team can provide encouragement to the patient during the frustrating times of recovery at home. Recovery is not only physical. Older adults recovering from immobility need the support of the healthcare team who helps them focus on their accomplishments and set goals for moving ahead.

Older adults need the therapy team to offer suggestions for regaining full function in the home. At a fundamental level, the therapy team is needed by the patient to provide exercises to build arm and leg strength to use the walker properly. In addition to regaining the ability to walk in the home, the patient needs assistance to recover full functionality at home. The older adult may need intervention of the team to recover the ability to go up and down basement stairs where the laundry room and food pantry may be located. Additionally, patients need assistance in recovering the ability to walk outside and return to pre-hospitalization levels of function. The healthcare team can offer suggestions to make gardening and yard work easier, which patients often enjoy look forward to after experiencing immobility. Some patients may need tips to resume use of a riding lawn mower or even drive. Interventions of the healthcare team and close monitoring of the recovering patient's progress may assist the individual back to the highest level of functioning possible.

At some point, the older adult will be no longer be under healthcare. They will be left on their own as there is no clear definition of when recovery is met, *if* recovery is met. There is no routine follow up regarding mobility or physical function, unless a

problem occurs. Thus, the older adult is alone and becomes part of a forgotten group. The older adult may not have regained the physical function they had before seeking care at the hospital. Why do we, as healthcare professionals believe it is good enough for the older adult to be able to use the walker to get to the bathroom when the individual was fully functional without a walker before seeking our care? Why is there not an assumed goal to assist the discharged patient to return to their prior level of functioning? This is a missing element in healthcare today. Older adults need more assistance and therapy than they receive. It is not innate knowledge of the older adult to know when and how much intervention is necessary. That is the responsibility of the healthcare team.

Immobility is a profound life assault with tremendous challenges to overcome especially at an advanced age. Patients will face unexpected challenges because they have not been prepared for the effects of immobility. Older adults need a coach to help prepare for the transition, offer support, and keep goals on the future. Nurses can be the liaison for recovery and can translate the importance of rehabilitation for the older adult. The coaching from the nurse may help reduce uncertainty and anxiety because the patient will be prepared for some of the situations that may arise. Patients know they will need help but do not know to what extent. As an example, an older adult recovering from immobility may be able to walk with the walker, but they can't let go to turn on the light.

Could longer periods of functional support at home with physical therapy to maximize functional ability help older adults to regain the sense of pre illness "self" and recover an increased satisfaction with their life?

If decline is not possible, persistent intervention is not only justified, but ethically required, and should also be part of standard treatment. A question that begs to be asked

is: how can we as healthcare professionals avoid the responsibility of returning a patient to their optimal level of physical functioning? This author suggests that best practice includes rehabilitation to advance the post-discharge physiological functioning to a level equal to their pre-illness or pre-hospitalization level to enhance the quality of life in patients who have developed immobility as a result of hospitalization.

Recovering from immobility cannot be rushed. Early vigorous remobilization can lead to muscle weakness, tenderness, and even injury, which can delay or may even permanently inhibit recovery, especially in older adults (Kasper & Xun, 2000).

Recovering from immobility is a long-term process and requires long-term intervention of the healthcare team to maximize the level of functional ability and perhaps regain a sense of pre-illness identity and holistic well-being. Thus, the ability to recover from immobility is a critical aspect to the older adult's ability to lead a fulfilling life.

### **Implications for Education**

The findings indicate that older adults need more education on the effects of immobility. The older adult should understand that contrary to popular belief; extended bed rest will weaken their body and not make it stronger. As a result, recovery will be prolonged and more difficult. If immobility during hospitalization is unavoidable, such as in cases of critical illness, the patient needs education that early mobility, even while hospitalized, will hasten the recovery process. Terminology should be such that the patient understands the message, such as This may be hard now, but let's do a little at a time, and you will get a little stronger every day. As John shared, "I didn't understand it at the time, but the more I was doing it (physical therapy), the better I was feeling, and the more I could do" (John, l. 32-33).



Individuals experiencing extended periods of illness should be prepared for the long road to recovery. The length of recovery and the difficulty of remobilization is not usually shared with the patient and family leaving them unprepared. They need to know what to expect for their mental health and planning.

Patients and family expect recovery to follow a forward trajectory, but recovery does not always occur in a planned and patterned fashion. Patients and family should be informed that there may be times when recovery pauses but will resume with continued effort. They should also be aware that recovery does not occur without considerable effort, and that the recovery period may be extended.

All members of the healthcare team should share a common goal to return the patient to the highest level of physiological functioning possible. At hospital discharge, the patient should be educated by the physician, nurse, and physical therapist that the goal is to return the patient to their pre-mobility level of functioning, if possible. As a result, patients will need to gradually increase their activity and not wait months until the next appointment with their physician. It is crucial that the older adult understand to continue working to advance their mobility. Many older adults may believe they have to wait for instruction from their doctor. As a result, their mobility progression will suffer and valuable time regaining optimal physical function will be lost.

Last, patients need instruction and education to continue on the ultimate goal of returning to an optimal level of functioning when home or outpatient therapy is discontinued. If the patient has not reached their desired level of functioning, they must be informed of how to progress their activity. It is imperative that they understand that recovery is not automatic, and that function will not return over time without effort.

From a personal perspective, this author has noticed that over the years, the responsibilities of nurse have expanded. There is less time available to spend at the bedside and to deliver personal care. Further, the nursing responsibility to assist patients with mobilization has changed. Nurses spend less time walking patients in the hallway than in the past. In today's acute care setting, other members of the healthcare team have assumed the responsibility of ambulating patients who require assistance. Nurses and nursing staff need more education on the benefits of mobility and the consequences of immobility. Finally, nurses should use strong nursing judgement and devote more time mobilizing patients to avert immobility and minimize patient's losses of mobility.

**Implications for Policy**

Policy change can occur at local, state, and national levels. Nurses are patient advocates and have the opportunity to change hospital protocols and policy at the local level. Membership and active participation in hospital committees, including shared governance, allow the nurse to provide input to enact change and promote best practices for both the patient and the nurse. An example of nurses affecting policy at the local hospital level involved a group of nurses from the southwest Banner Health Organization.

The nurses understood the importance of mobility but were not able to conduct independent mobility assessments. The nurses collaborated with a multidisciplinary team that included nurses, physical and occupational therapists, and risk management. They developed a mobility assessment tool that nurses could easily use at the bedside to assess a patient's mobility status. The tool was tested and found to be reliable and valid. As a result, the Banner Mobility Assessment Tool has been incorporated into the electronic medical record for daily use in all Banner hospitals. This tool allows nurses to

independently assess a patient's level of mobility and then recommend the appropriate safe patient handling equipment to be used (Boynton & Perez, 2014). Not only does this allow the nurse to safely assist the patient, it also can reduce injuries to nurses who assist patients with transfers and mobilization.

It is important for nurses to serve on organizational and advisory boards to provide professional input to community leaders and policy-making panels. Nurses who serve on health care boards and health plan advisory councils can educate organizational leaders, including health insurance executives on the benefits of providing long-term physical therapy to older adults who have experienced immobility. Also, nurses can serve as expert consultants in the bill creation process and include the patient's dilemma in healthcare.

Further, nurses can seek election to promote change and advance healthcare policy. Two nurses currently serve as members of Congress. The two Congresswomen can bring a unique nursing perspective and provide evidence-based research to legislation that seeks to enact policy change.

### **Implications for Research**

Most studies of early mobility focus on the acute care setting. The current study is the first to examine the experiences of early mobility in older adults post-hospitalization. This study should be replicated using a more diverse sample to include an equitable distribution of gender, race, and socioeconomic status. A closer look at these factors may provide insight into who is most vulnerable to immobility during and after hospitalization.

An additional recommendation for future research is to explore what factors predispose an older adult to immobility during hospitalization. Understanding the factors that predispose an older adult to immobility may help identify which older adults are most vulnerable to immobility during hospitalization. Next, an interventional study to reduce the effects of immobility in older adults who are hospitalized can be proposed and conducted.

The current study revealed that individuals with positive attitudes were more motivated to get better and described better outcomes than those with negative attitudes. Therefore, a third recommendation for future research is to investigate how an individual's characteristics such as attitude and motivation influence their level of recovery from immobility after hospitalization. Last, a follow-up study can be conducted to investigate the benefits of the healthcare team assisting the older adult to set personal goals, provide encouragement, and participate in small celebrations when the personal goals are met.

## **Conclusion**

*The Crushing Assault* of immobility is a devastating event for the older adult who can no longer function as before. Many who functioned as the care giver for their family now find themselves in a role of being cared for. This is emotionally devastating for the older adult who is suddenly faced with the inability to function in the most basic human capacity. This is emotionally devastating for the older adult who is usually not prepared for the extent of the immobility they experience.

*The Rocky Road to Regaining Mobility* is physically and emotionally draining on the older adult. A critical component of recovery requires a supportive system that

includes family and members of a healthcare team. Nurses and physical therapists foster recovery with professional expertise but perhaps equally important, they provide encouragement and emotional support that allows the older adult to continue when they are burdened with the demands of recovery.

This study highlights that mobility is more than moving from one location to another. The culture of older adults who have experienced immobility indicates that mobility is a critical component in the human experience of living. *Mobility is Life.*

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Table 1

*Early Mobility Clinical Studies*

Author, year	Sample	Method	Findings
Azhu et al., 2016	MICU patients in Detroit, MI (n = 3,233).  Intervention group (n= 3.233).	A new mobility team implemented the use of a mobility scale with individualized early mobility interventions and skin care to reduce pressure ulcer rates and complications of immobility.	Pressure ulcer rate significantly reduced 9.2% to 6.1% (p=.04).  Hospital readmission rate significantly reduced 17.1% to 11.5% (p=.001).  No significant difference in ICU LOS.
Corcoran et al., 2016	Adult MICU and surgical ICU patients in New York, NY (n = 283).	Education and training of interprofessional team caring for ICU patients. Implement early mobility physical with therapy 1-2 times/day and occupational therapy 1 time /day to	ICU LOS significantly reduced by 20% from 4.6 to 3.7 days, p = .05.  Hospital LOS significantly reduced by 40% from 6.0 to 3.4 days, p < .01.  Floor days significantly reduced by

Intervention group (n = 160).	determine the effect on LOS, cost, and utilization of services.	43% from $6.0 \pm 5.28$ days to $3.4 \pm 2.8$ days, $p < .01$ .
Control pre- intervention group (n = 123).		<p>Patients requiring services @ home post-discharge significantly reduced from 40.5% to 18.2%, <math>p &lt; .01</math>.</p> <p>Significant reduction in use of antipsychotics in the intervention versus the control group, 0/160 versus 8/123, <math>p &lt; .05</math>.</p> <p>Significant reduction in use of benzodiazepines in the intervention versus the control group, 9/160 versus 22/123, <math>p &lt; .05</math>.</p> <p>Direct ICU and floor costs reduced by 2.9%=1.5 million net cost savings/year.</p>



Engel et al., 2013	<p>Patients in</p> <p>ICU 1: Winston-Salem, NC (n = 330)</p> <p>Intervention (n = 165).</p> <p>Control (n = 165).</p> <p>ICU 2: Baltimore, MD (n=57)</p> <p>Intervention (n = 30).</p> <p>Control</p> <p>retrospective comparison (n = 27).</p>	<p>Early mobility education, training, and intervention at three U.S. ICUs.</p>	<p>Significant differences between intervention and control groups in all three ICUs.</p> <p>ICU 1:</p> <p>Patients receiving physical therapy (91.4% versus 12.5%).</p> <p>Decreased ICU LOS (6.9 versus 5.5 days).</p> <p>Decreased hospital LOS (14.5 versus 11.2 days).</p> <p>Annual cost saving of half a million dollars related to direct patient care costs.</p>
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ICU 3: San

Francisco, CA (n =

473).

Intervention (n =

294).

Control

retrospective

comparison (n =

79).

ICU 2:

Significant increase in the number of patients receiving physical therapy (93% versus 73%).

Significant increase in the average number of physical therapy/occupational therapy treatments increased (7 versus 1).

ICU LOS decreased by 2.1 days.

Hospital LOS decreased by 3.1 days.

ICU 3:

Distance walked in the ICU

increased from 40 feet to 140 feet

Decreased ICU LOS by 2 days.

Decreased hospital LOS by 2 days.

Floyd et al., 2016	<p>Thoracic and cardiovascular ICU patients in central Virginia (n = 60).</p> <p>Preintervention group</p> <p>(n = 15 cardiac and 15 thoracic patients)</p> <p>Intervention group</p> <p>(n = 15 matched cardiac and thoracic patients)</p>	<p>Early mobility using a progressive mobility protocol based on individual patient ability.</p>	<p>No statistically significant findings for ICU LOS, hospital LOS, or ICU readmissions.</p> <p>Clinically significant results include:</p> <ul style="list-style-type: none"> <li>Decreased mean ICU LOS, <math>p = .779</math></li> <li>Decreased mean hospital LOS, <math>p = .502</math></li> <li>Decreased 30-day ICU readmission rate</li> <li>Reduced from 3 days to 1 day (<math>p = .301</math>).</li> </ul>
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McWilliams et al., 2015	Mechanically ventilated patients in a large tertiary ICU in Birmingham, England (n = 582). Intervention group (n = 225). Control group was from retrospective chart review (n = 202).	Early mobility program to evaluate the effect of early rehabilitation in mechanically ventilated patients.	Significant findings in the intervention group compared to the control group:  ICU LOS significantly reduced by 2.5 days from 16.9 to 14.4 days, p = .007.  Hospital LOS significantly reduced by 5.2 days from 35.3 to 30.1 days, p = .016.  Ventilator days significantly reduced by 2.4 days from 11.9 to 9.3 days, p < .05.  Mobility level significantly improved at discharge from 3 to 5, measured by the Manchester mobility score, p = .05.
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In-hospital mortality rate significantly reduced from 39% to 28%,  $p < .05$ .

Moss et al., 2016	Acute respiratory failure patients in five Denver CO ICUs (n = 120). randomized patients. Intervention (n = 59). Control (n = 61).	Intensive physical therapy program to determine the effect on long-term physical function performance compared to standard of care physical therapy.	<p>Significant findings for the intervention group: Increased total time in physical therapy</p> <p>Intervention group <math>12.4 \pm 6.5</math> sessions versus the control group <math>6.1 \pm 3.8</math> sessions, <math>p &lt; .001</math>.</p> <p>Intervention group <math>408 \pm 261</math> minutes versus the control group <math>86 \pm 63</math> minutes, <math>p &lt; .001</math>.</p> <p>No statistically significant difference in the total Continuous Scale Physical Functional Performance Test scores between an intensive physical therapy</p>
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program compared to a standard of care physical therapy program and measured at 3 points using the Continuous Scale Physical Functional Performance test short form total score

1 month,  $19.0 \pm 3.7$  versus  $20.9 \pm 4.1$ ,

$p = .73$

3 months,  $30.7 \pm 3.8$  versus  $36.8 \pm$

$4.3$ ,  $p = .29$ .

6 months,  $39.5 \pm 3.9$  versus  $44.0 \pm$

$4.0$ ,  $p = .43$ .

No statistically significant differences in the ICU or hospital LOS between the intensive versus the standard of care physical therapy.

Schaller et al., 2016	International randomized surgical ICU patients from Austria, Germany, Boston, and Worcester MA. (n = 200). Intervention (n = 104). Control (n = 96).	Early goal directed mobilization program to determine if early mobility leads to improved mobility, decreased LOS, and increased functional independence at discharge.	Significant increase in the surgical ICU optimal mobilization score in the intervention group from 1.5 to 2.2 on a 0-4 scale, $p < .0001$ . Significant reduction in ICU LOS in the intervention group from 10 to 7 days, $p = .0054$ . Significant reduction in hospital LOS in the intervention group from 21.5 to 15 days, $p = .01$ Significant increase in the mini-modified Functional Independence Measure at discharge in the intervention group compared to the control group from 5 to 8, $p = .0002$ .
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Significant increase in the subdomain

locomotion score in the intervention  
group compared to the control group  
from 2 to 4,  $p = .0003$ .

Significant increase in the intervention

group compared to the control group  
in subdomain transfer score from 3 to  
4,  $p = .0001$ .

Significant increase in the intervention

group compared to the control group  
in the subdomain functional  
independence at hospital discharge  
from 25 to 44,  $p = .003$ .

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*Note:* ICU = intensive care unit; LOS = length of stay; U.S. = United States



Table 2

*Effect of Immobility in Animals*

Author (year)	Sample	Method	Finding
Bebout et al., 1993	18 same breed hounds, ages 10- 12 months	HLI for 21 days	GM decreased in weight by 31% from $81 \pm 4$ to $56 \pm 2$ in the control and experimental group, respectively ( $p < .01$ ). Muscle venous pH was greater in the immobilized group ( $p < .01$ ).
Booth & Kelso, 1973	12 male Sprague- Dawley rats, ages 70-80 days	Bilateral HLI for 4 weeks	Immobilized SM Type I slow twitch fibers decreased from $87 \pm 2$ to $69 \pm 7\%$ and Type II fast twitch fibers increased from $13 \pm 2$ to $31 \pm 7\%$ ( $p < .05$ ). Soleus contraction time was shorter from $31 \pm 7.3$ to $19 \pm 2.4$ msec compared to controls ( $p < .05$ ).
Kang & Ji, 2013	14 female mice, ages 56-70 days	Randomly selected unilateral HLI for 14 days	PGC-1 $\alpha$ decreased in HLI by 50% ( $p < .01$ ). Antrogin-1 protein increased by 3.9 and 3.4-fold in TAM and

GM, respectively ( $p < .01$ ). Mitochondrial DNA was reduced by 71% with IM ( $p < .01$ ). The ratio of muscle to body weight decreased by 20% in the TAM and 18 % in the GM after 2 weeks of HLI ( $p < .05$ ).

Kasper et al., 79 female Wistar HLS for 28 days  
1990 rats, age 120 days

SM mass decreased on the 7<sup>th</sup> day of HLS to 73% of the control group and to 58% on day 14, ( $p \leq .05$ ). Type I fibers decreased from 92 to 81% ( $p \leq .05$ ). Type II fibers increased from 8-19% ( $p \leq .05$ ). Body mass decreased during HLS and reached 81% of control values by day 28 ( $p \leq .05$ ).

Kasper et al., 25 female Wistar HLS for 28 days  
1993 rats, age 120 days

SM mass decreased on the 7<sup>th</sup> day of suspension from  $130 \pm 5$  to  $85 \pm 2$  mg in the control and experimental group, respectively ( $p \leq .05$ ). PM mass decreased on day 7 ( $p \leq .05$ ). Type I fiber CSA was 41% smaller

than controls ( $p \leq .01$ ). Body mass decreased to 84% of control value on day 28 ( $p \leq .0003$ ).

Kasper, 1999    35 female Wistar    HLS for 28 days  
rats, ages 120-135  
days

PM CSA decreased after 28 days of HLS to 86% of control values ( $p = .05$ ) with atrophy after 28 days of HLS ( $p = .05$ ). Whole body weight decreased to 83% of control values on the 28<sup>th</sup> day ( $p = .05$ ).

Kasper &    14 female Wistar    HLS for 14 and 28 days  
Xun, 2000    rats, 120 days old

SM and PM demonstrated loss of relative titin and myosin weight at 28 days of HLS compared to controls (87% and 84% of control SM, and 88% and 83% of control PM, respectively ( $p \leq .05$ ).

Kunz et al.,    18 male Wistar    Unilateral right HLI for 14  
2014    rats, ages 56-84    days  
days

HLI resulted in a reduction in body weight after 14 days ( $p < .05$ ). IM caused a complete loss of articular cartilage of the talus between the distal tibia and

calcaneus, and the center of the joint. The synovial membrane was thickened by blood infiltration (no reported significance).

Kvist et al., 1995	50 male Sprague-Dawley rats, ages 63-77 days	Unilateral left HLI for 21 days	Vascular density of the myotendinous junction decreased from $16 \pm 2$ to $10 \pm 2$ in the control and experimental group, respectively ( $p < .001$ ).
Templeton et al., 1984	14 male Sprague-Dawley rats, no age specified	HLS for 14 and 28 days	SM wet weights declined from $77 \pm 3.7$ mg for control to $40 \pm 1.6$ and $31 \pm 1.5$ mg at 2 and 4 weeks of HLS respectively. After 1 week of suspension, the peak isometric tension and maximal rate of tension development declined to 45.3 and 45.6% of control values, respectively ( $p < .05$ ). After 2 weeks suspension, contraction and one-half relaxation times declined to 77 and 72% from control values,

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respectively ( $p < .05$ ). Muscles in the suspension group did not display Type I predominance ( $p < .001$ ).

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*Note.* GM = gastrocnemius muscle; SM = soleus muscle; msec = millisecond; PGC-1 $\alpha$  = Peroxisome proliferator-activated receptor-gamma coactivator -1 alpha; HLI = hind limb immobilization; TAM = tibialis anterior muscle; HLS = hind limb suspension; PM = plantaris muscle; CSA = cross sectional area; IM = immobilization

Table 3

*Effect of Immobility in Humans*

Author (year)	Sample	Method	Findings
de Boer et al., 2007	9 healthy men, ages 18- 28	Unilateral leg suspension for 23 days	QM biopsy CSA decreased by 5.2% on day 14 ( $p<.001$ ), and 10% on day 23 ( $p<.001$ ).  Myofibrillar protein synthesis fell from .047% on day 0 to .022% on day 10 ( $p<.01$ ). FAK phosphorylation decreased 30% on day 10 ( $p<.01$ )
Dirks et al., 2016	10 healthy men, ages 22-24	7 days of bed rest	QM biopsy CSA decreased by 3.2% ( $p<.01$ ), and lean tissue mass decreased $1.4\pm.2$ kg ( $p<.01$ ). 1-RM declined by 6.4% on day 7 ( $p<.05$ ). Insulin sensitivity decreased $29\pm5\%$ ( $p = .01$ ).

Kortebein et al., 2008	11 healthy men and women, ages 62-72	10 days of bed rest	Knee extensor strength decreased $13.2 \pm 4.1\%$ ( $p=.004$ ), stair climbing power decreased by $14 \pm 4.1\%$ , ( $p = .01$ ), and maximal aerobic capacity was 12% lower on day 11 ( $p = .04$ ).
LeBlanc et al., 1992	8 healthy men, ages 19- 52	17 weeks of bed rest	Mean loss of lean body tissue after bed rest was 2.6 kg ( $p<.05$ ). Regional decreases in lean body mass after bed rest: legs -11.9%; upper legs -12.2%; lower legs -11.2% ( $p<.05$ ); Total body weight in kg. -4.1%, ( $p<.05$ ).
Puthuchearry et al., 2013	63 ICU patients, mean age 54.7 years	10 days of bed rest	Rectus femoris biopsy CSA decreased by 10.3% on day 7, and 17.7% on day 10 ( $p<.001$ ).
Suetta et al., 2009	20 healthy men, 9 between ages 61-74,	14 days of unilateral limb IM	Maximal quadriceps strength decreased in YM and OM 19.8% and 15.7%, respectively ( $p<.05$ ).

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and 11 between ages

21-27

QM volume decreased more in YM than OM

(YM -8.9%, OM -5.2%,  $p < .05$ ).

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*Note.* CSA=cross sectional area; FAK = Focal adhesion kinase; IM = Immobilization; YM = young men; OM = old men; QM = quadriceps muscle; 1-RM = one repetition maximum; ICU = intensive care unit.



Table 4

*Effect of Remobilization after Immobilization in Animals*

Author (year)	Sample	Method	Findings
Kang & Ji, 2013	14 female mice, ages 56-70 days	Five days of unspecified RM following randomized unilateral HLI for 14 days	After IM, PGC-1 $\alpha$ decreased in HLI by 50% ( $p<.01$ ). Antrogin-1 protein increased by 3.9 and 3.4 fold in TAM and GM, respectively ( $p<.01$ ). Mitochondrial DNA was reduced by 71% with IM ( $p<.01$ ). RM did not reverse any of these changes. TAM showed a 2.3-fold increase in H <sub>2</sub> O <sub>2</sub> ( $p<.05$ ) and a 4-fold increase in 8- isoprostane ( $p<.01$ ) compared to control. Tumor necrosis factor- $\alpha$ and interleukin-6 levels in TAM were -4 and 3-fold higher respectively, in RM after IM versus controls ( $p<.01$ ).

Kasper et al., 1990	79 female Wistar rats, age 120 days	28 days of RM following 28 days of HLS	After 14 days of RM, type I fibers decreased $29 \pm 8.6\%$ ( $p < .05$ ), and type IIc muscle fibers increased $19 \pm 7.4\%$ ( $p < .05$ ). After seven days of RM, the SM increased to 70% of control values ( $p \leq .05$ ), and to 101% after 28 days of RM ( $p < .05$ ).
Kasper, 1999	35 female Wistar rats, ages 120-135 days	28 days of RM following 28 days of HLS	Seven days of RM, increased whole body weight to control values ( $p = .05$ ). After 28 days of RM, PM CSA increased to 153% of control values ( $p = .05$ ).
Kunz et al., 2014	18 male Wistar rats, ages 56-84 days	14 days of RM following unilateral right HLI for 14 days	Researchers reported aquatic exercises resulted in more efficient recovery of damaged ankle cartilage then free remobilization. However, the only significant level reported in the study was a

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reduction in body weight after 14 days of IM

( $p=.05$ ).

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*Note.* RM = remobilization; HLI = hind limb immobilization; IM = immobilization; PGC-1 $\alpha$  = Peroxisome proliferator-activated receptor-gamma coactivator -1 alpha; TAM = tibialis anterior muscle GM = gastrocnemius muscle; H<sub>2</sub>O<sub>2</sub> = hydrogen peroxide; HLS = hind limb suspension; SM = soleus muscle; PM = plantaris muscle; CSA = cross sectional area.

Table 5

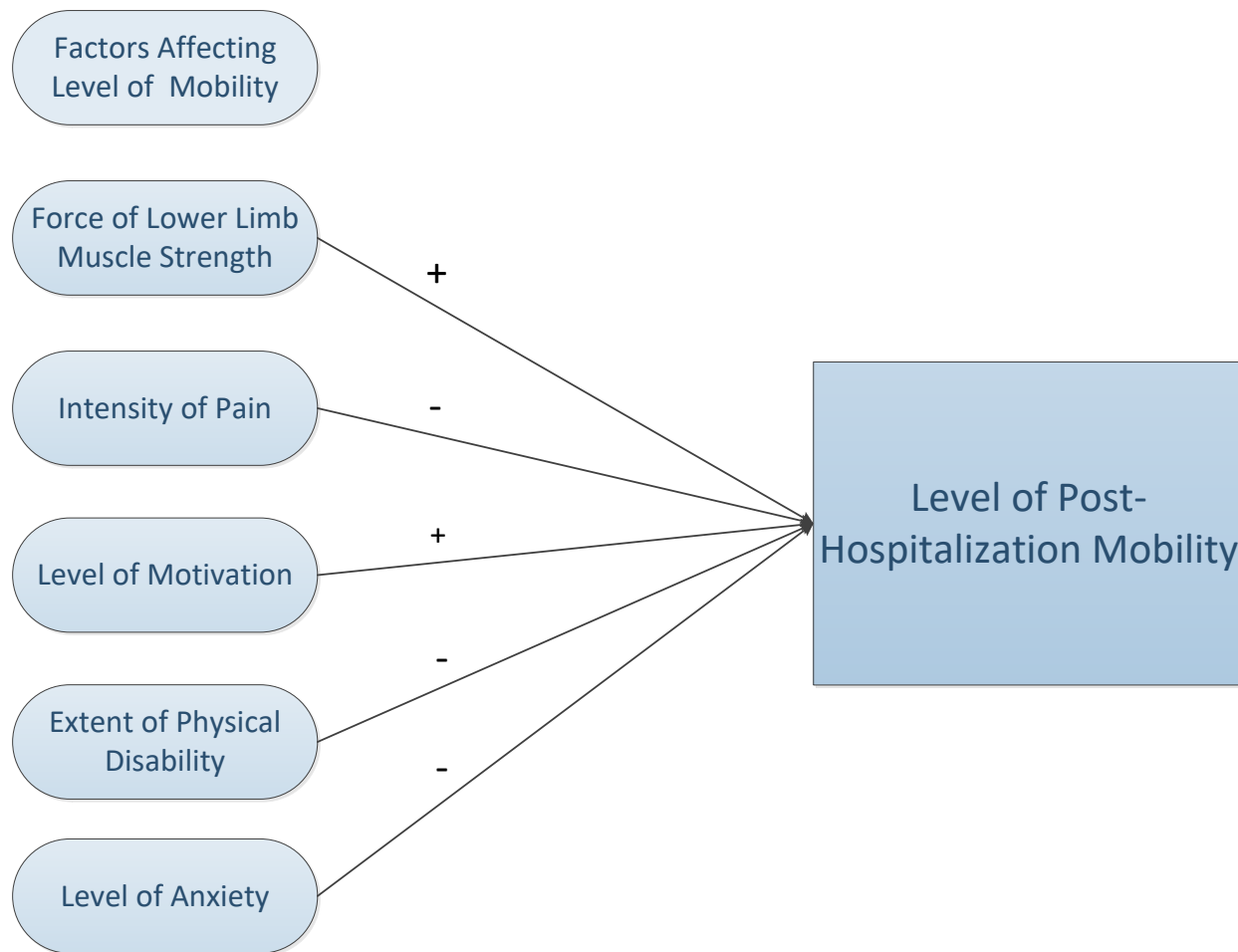
*Effect of Remobilization after Immobilization in Humans*

Author (year)	Sample	Method	Findings
Suetta et al., 2009	20 healthy men, 9 between ages 61-74, and 11 between ages 21-27	Four weeks of RM strength training after 14 days of unilateral limb IM	RM resulted in both YM and OM regaining their baseline MVC ( $p<.05$ ) and a return to normal for RFD increased (YM +16.8%, OM +38.3% ( $p<.05$ )). QM volume increased more in YM than OM, 8.2% in YM and 3.8% in OM ( $p<.05$ ). YM reached values above baseline after RM ( $p<.05$ ). OM did not fully recover their QM volume( $p<.05$ ) after RM.
Tanner et al., 2015	23 healthy adults, 18-35 and 60-75 years - 14 younger (7 male and 7	Eight weeks of high intensity resistance exercise, three times per	Vastus lateralis biopsies were collected and assessed for protein synthesis. Baseline expression for skeletal muscle MURF1,

female) and 9 older (2 male, 7 female) week after five days of bed rest MAFBX, and REDD1 and mRNA were significantly greater in older versus younger adults ( $p < .05$ ). The ratio of LC3II/I protein synthesis was approximately 80% lower in older versus younger adults ( $p < .05$ ).

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*Note.* RM = remobilization; IM = immobilization; YM = young men; OM = old men; MVC = maximal voluntary contraction; RFD = rate of force development; QM = quadriceps muscle; MURF1 = muscle ring finger 1, MAFBX = Atrogin-1/muscle atrophy F-box; REDD1 = regulated DNA damage and development 1; mRNA = messenger RNA; LC3II/I protein = microtubule associated protein.



*Figure 1.* Author-developed model. The ovals to the left represent factors affecting the level of post-hospitalization mobility. The mobility model shows factors that positively and negatively affect the level of post-hospitalization mobility. Lower limb muscle strength and motivation have a positive relationship to the level of mobility. Higher force of lower limb muscle strength and level of motivation result in a higher level of mobility. Intensity of pain, extent of physical disability, and level of anxiety have a negative relationship to the level of mobility. Lower intensity of pain, less extent of physical disability, and lower levels of anxiety result in a higher level of mobility.

## Appendix A

## Executive Summary

Proposed is a qualitative study that I am conducting with participants recruited from area community settings, a Facebook post, local radio advertisements, and word of mouth.

**Purpose**

The purpose of this research is to describe the early mobility experience of adults who are 60 years old and older and have been in the hospital for at least one week due to a medical condition, then discharged.

**Sample and setting**

The sample for this study will include adult males and females who are 60 years old and older, have been in the hospital for at least one week due to a medical condition, have been discharged from the hospital, and are able to speak English. Individuals will be excluded if they remain on bed rest post-hospital discharge or are unable to participate in a conversation. The interview setting will be in a comfortable and private location of the participant's choice.

**Data collection**

Written informed consent will be obtained before all interviews. The researcher will conduct 10-15 face-to-face interviews using semi-structured questions with discharged patients. Pre-determined questions will guide the interviews, which will last about one hour. The interviews will be voice-recorded. Participants will be compensated with a \$20 gift card from Target.

**Data analysis**

The data will be de-identified and transcribed verbatim. A team of three researchers will analyze the data.

Lila Moersch MSN, RN, PhD Candidate

UMSL College of Nursing

Email: [lm5x2@mail.umsi.edu](mailto:lm5x2@mail.umsi.edu)

Cell: 314-518-7665



Appendix B

Recruitment Flyer

*UMSL Institutional Review Board has reviewed and approved  
this research study for human subjects participation*

**Discharged hospital patients**

**Volunteers are needed**

**for a study about mobility and physical activity**

*What is your experience with walking and physical activity after being in the hospital  
for at least one week?*

*Will you share your story?*

Confidential voice-recorded conversations with a nursing researcher (about one hour).

You will be offered a \$20 gift card in appreciation for your time and contribution to this study.

Please contact Lila Moersch from the UMSL College of Nursing to learn more or schedule an interview. Confidential private telephone: 314-518-7665



## Appendix C

## Telephone Screening Script

Hello. My name is Lila Moersch. I am a nurse and I am very interested in the level of people's activity and how it is affected by being in the hospital. I am conducting a study with people who are age 60 and over, and who have been in the hospital and inactive for at least one week. The study is for my doctoral degree from the University of Missouri-St. Louis (UMSL). The study will require about one hour of your time. If you participate, you will be given a \$20 Target gift card. Would you be interested in participating in the study?

If no, thank the individual and hang up.

If yes, then continue.

I need to ask you a few more questions. Is that OK? If yes, then continue:

OK. Thank you. Can you please tell me your age?

If the individual is not 60 or older, thank them for their time and explain the participants have to be at least age 60, then hang up. If the individual is at least 60 years of age, then continue.

Have you been admitted to the hospital for at least one week due to a medical condition?

Would you say that you were more inactive than usual during the hospitalization?

If no, thank the individual and hang up.

If yes, then continue.

Since you were discharged, have you been up and out of bed, either with or without help?

If no, thank the individual and hang up.

OK. Thank you. The purpose of this study is to understand the mobility experiences of individuals who have hospitalized for at least one week and are then discharged. The study will take about one hour of your time and I will be asking you some questions about getting up and

around after you were discharged. All information from our talk is confidential. You will be compensated for your time with a \$20 gift card. We can meet in a comfortable and private location of your choice.

If you choose to participate, you will need to sign a consent form that you are volunteering for the study. Our conversation will be recorded. You will be able to stop our talk at any time, if you do not want to continue. We will talk for about an hour. Is that ok with you?

If no, thank the individual and hang up.

If yes, continue.

Do you think that you are interested in being part of the study?

If not interested, thank the person and hang up.

If yes, continue.

Do you have any questions for me? If yes, answer the questions.

Why don't we set up a time that we can talk for about an hour? Would that be all right with you?

May I give you my cell number in case you wish to contact me?

## Appendix D



One University Boulevard  
St. Louis, Missouri 63121-4499  
Telephone: 314-516-7077  
E-mail: lm5x2@mail.umsf.edu

**Informed Consent for Participation in Research Activities**

The Experience of Early Mobility After One Week of Hospital-Acquired Deconditioning

Participant \_\_\_\_\_  
1521028-2

HSC Approval Number

Principal Investigator Lila Moersch, MSN, RN  
518-7665

PI's Phone Number 314-

**Summary of the Study**

This is a brief description of the project

This project is a nursing research study being conducted in conjunction with the University of Missouri-St. Louis. Participation is voluntary.

The purpose of this research is to describe the early mobility experience of adults who are 60 years old and older and have been in the hospital for at least one week due to a medical condition, then discharged.

Participation will include one study visit and a conversation with a nurse researcher that is expected to take about one hour. The conversation will be in a comfortable and private location of your choice. The conversation will be voice-recorded. You will be asked about your experience of mobility, or getting up and around, after being in the hospital. I will ask some questions about these topics, but you will direct the conversation. Together we will explore your experience of early mobility after being discharged from the hospital.

There is no more than minimal risk in this research. There is a slight risk of breach of confidentiality, mild boredom, or fatigue. It is possible that you may experience some discomfort if you have troubling experiences to share. Talking about your mobility experiences of getting up and around can be enjoyable or not. I will do my best to conduct a comfortable conversation.

There are no direct benefits for you participating in this study. However, your participation may contribute to knowledge about early mobility and may lead to improved hospital and nursing care of individuals after hospital discharge.

1. You are invited to participate in a research study conducted by Lila Moersch MSN, RN and Anne Fish PhD, RN, FAHA through the University of Missouri-St. Louis. The purpose of this research is to describe the early mobility experience of adults who

are 60 years old and older and have been in the hospital for at least one week due to a medical condition, then discharged.

2. a) Your participation will involve a conversation with a nurse researcher. The conversation will last for about one hour. The conversation will be about your experience of getting up and around after being in the hospital for at least one week, and then being discharged. The conversation will be in a comfortable and private location of your choice.
  - The conversation will be recorded. At the end of the conversation, I will ask you some basic information such as your age, gender (or sex), race, how many days you were in the hospital, how long ago the hospitalization was, and who your immediate support person is (relative, friend, neighbor, etc.).
  - Approximately 10-15 participants may be involved as part of this University of Missouri-St. Louis research project.
- b) The amount of time involved in your participation will be a total of approximately one hour for one conversation with the nurse researcher, and you will receive a \$20 gift card from Target for your time.
3. There is no more than minimal risk in this research. There is a slight risk of breach of confidentiality, mild boredom, or fatigue. It is possible that you may experience some discomfort if you have troubling experiences to share. Talking about your mobility experiences of getting up and around can be enjoyable or not. I will do my best to conduct a comfortable conversation.
4. There are no *direct* benefits for you participating in this study. However, your participation may contribute to knowledge about early mobility and may contribute to improved hospital and nursing care of individuals after hospital discharge.
5. No individual research results will be disclosed to participants.
6. Your participation is voluntary, and you may choose not to participate in this research study or withdraw your consent at any time. You have a right not to answer any specific question or questions. You will NOT be penalized in any way should you choose not to participate or withdraw.
7. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication that may result from this study. In rare instances, a researcher's study must undergo an audit or program evaluation by an oversight agency (such as the Office for Human Research Protection) that would lead to disclosure of your data as well as any other information collected by the researcher. Confidentiality will be maintained by assigning each participant a number. Any information collected on paper that can be identified with you will be stored in a locked file, separately from the interview information. The papers will be shredded when the study is completed. The interview data will be accessible only to the research team consisting of the principal investigator, who is a PhD candidate, two UMSL faculty nurse researchers, and a research-educated transcriptionist. Consents for the study will be stored in a locked file. The consents will be accessible only to the research team. The consents will be shredded three years after the end of the study. The

recordings will be transcribed and stored on password-protected computers to protect your identity. The recordings will be erased immediately after they are verified for accuracy.

8. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Lila Moersch, MSN, RN at (314) 518 -7665 or the Faculty Advisor, Anne Fish PhD, RN, FAHA at (314) 516-7077. You may also ask questions or state concerns regarding your rights as a research participant to the Office of Research, at (314) 516-5897.

**I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I hereby consent to my participation in the research described above.**

---

**Participant's Signature**

**Date**

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**Signature of Investigator or Designee**

**Date**

## Appendix E

## Interview Guide

Participant # \_\_\_\_\_

As you know, I am interested in people's experience getting up and around after they are discharged from the hospital. I would like to know as much as I can about your experience so that as a nurse, I can think about ways to help people in the hospital and at home. I will be voice- recording the interview and I will tell you when I start the recording.

I will ask an opening question and then we will talk about your experiences as you tell me about them. Feel free to think for a while. Take as much time to think as you like, and just get comfortable. When you've said all you want to say, I will ask some basic questions about your age, race, gender, how long you spent in the hospital, and how long ago it was. I will also ask who your main support system is (the main person is that supports you). Then we will stop. The recording will then be typed word for word and any possible identifiers (your name, the names of others, places, anything unique that could identify you) will be taken out.

Do you have any questions at all about the process? OK, let's begin; I'll start the recording.

We've already talked about the study and I've started recording our conversation. As you know, I am interested in knowing more about what it is (was) like for you to have a change in your ability to get up and around after you were discharged from the hospital.

I'd like to begin by asking you....

The following questions, or derivatives of these questions, will be addressed to participants.

1. As you think about what it was like to get up and around after you were discharged from the hospital, is there anything that stands out for you? Is there a situation that comes to mind?
2. Can you please tell me about what a typical day was like before you went into the hospital?
3. And now that you are home (or out of the hospital), can you please tell me what a typical day would be like for you?
4. Can you please tell me about getting up from the chair after you left the hospital?
5. How was that?
6. Thinking about after you came home (or were discharged from the hospital), can you tell me how sitting in the chair and getting up from the chair were different than before you went into the hospital?
7. Sometimes sitting on the side of the bed is different from sitting in a chair. Can you tell me if sitting on the side of the bed was different for you when you came home from the hospital (or after you were discharged from the hospital) compared to before you went into the hospital?
8. Can you please tell me *how* it was different?
9. Have you been up to walk since you returned home (or were discharged) from the hospital?
10. As you were thinking about getting up for the first time at home (or after you were discharged from the hospital), what were your concerns?

11. Please tell me about the first time you walked after being discharged the hospital.

What was that like?

12. What else was happening? And then, what happened? How was that?

13. Can you please tell me more about that day?

14. Can you tell me how walking was different after you left the hospital than walking before you went into the hospital?

15. Can you please tell me how walking is different today compared to before you went into the hospital?

16. Can you tell me about the effect of any of your medications on your walking?

17. I was wondering if you ever had any anxiety.

18. Is there anything else you would like to share with me?

The following extensions may be included:

Tell me more about that....

What was that like for you...?

Anything else come up around that?

What else was happening that day?

Anything more you remember?

Was there anything else going on?

Others have told me about.....Is that anything like your experience?

What stands out for you about that situation?

That's interesting, isn't it?



## Appendix F

## Demographic Data Collection Form

ID # \_\_\_\_\_

Age \_\_\_\_\_

Gender \_\_\_\_\_

Race \_\_\_\_\_

Length of hospitalization:

Number of days, weeks, or months

\_\_\_\_\_

How long ago for hospitalization:

Number of days, weeks, months, or years

\_\_\_\_\_

Who is your immediate support system?

Family, friend, neighbor, etc.

\_\_\_\_\_